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ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2  
14805 LANCE MISSILE NUMBERS 3208/3207, ROUND NUMBERS 285 APT/28--ETC(U)  
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METEOROLOGICAL DATA REPORT

14805 LANCE  
MISSILE NOS. 3208/3207  
ROUND NOS. 285 APT/286 APT  
(29 July 1976)

BY

WSMR METEOROLOGICAL TEAM

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WHITE SANDS MISSILE RANGE, NEW MEXICO

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br><br>Meteorological data gathered for the launching of 14805 Lance, Missile Numbers 3208/3207, Round Numbers 285 APT/286 APT, are presented in tabular form. |                                  |  |

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# CONTENTS

|  | PAGE |
|--|------|
| INTRODUCTION -----   | 1    |
| INTRODUCTION -----   | 3    |
| DISCUSSION -----   | 1    |
| DISCUSSION -----   | 3    |
| TABLES   |      |
| I. Surface Observations taken at LC-39 -----                               | 1    |
| II. Surface Observations taken at WSD -----                                | 2    |
| III. Surface Observations taken at LC-39 -----                             | 3    |
| IV. Surface Observations taken at WSD -----                                | 4    |
| V. Pilot-Balloon-Measured Wind Data, Release No. 1<br>at 0955 MDT -----    | 5    |
| VI. Pilot-Balloon-Measured Wind Data, Release No. 2<br>at 1003 MDT -----   | 7    |
| VII. Pilot-Balloon-Measured Wind Data, Release No. 3<br>at 1025 MDT -----  | 10   |
| VIII. Pilot-Balloon-Measured Wind Data, Release No. 4<br>at 1032 MDT ----- | 12   |
| IX. Stallion Significant Level Data (Release Time:<br>0940 MDT) -----      | 15   |
| X. Stallion Upper Air Data (Release Time:<br>0940 MDT) -----               | 16   |
| XI. Stallion Mandatory Levels (Release Time:<br>0940 MDT) -----            | 23   |
| XII. WSD Significant Level Data (Release Time:<br>0950 MDT) -----          | 24   |
| XIII. WSD Upper Air Data (Release Time:<br>0950 MDT) -----                 | 26   |
| XIV. WSD Mandatory Levels (Release Time:<br>0950 MDT) -----                | 34   |

CONTENTS (CONT)

|   | PAGE |
|---|------|
| XV. Jallen Significant Level Data (Release Time:<br>1000 MDT) ----- | 35   |
| XVI. Jallen Upper Air Data (Release Time:<br>1000 MDT) -----        | 37   |
| XVII. Jallen Mandatory Levels (Release Time:<br>1000 MDT) -----     | 44   |



## INTRODUCTION

14805 Lance, Missile Number 3208, Round Number 285 APT, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1000 HRS MDT, 29 July 1976. The scheduled launch time was 1000 HRS MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

|                   |          |                   |
|-------------------|----------|-------------------|
| ELEVATION         | 4,063.75 | FEET/MSL          |
| PRESSURE          | 878.3    | MBS               |
| TEMPERATURE       | 23.6     | °C                |
| RELATIVE HUMIDITY | 70       | %                 |
| DEW POINT         | 17.7     | °C                |
| DENSITY           | 1,021.0  | GM/M <sup>3</sup> |
| WIND SPEED        |          | CALM              |
| WIND DIRECTION    |          | CALM              |
| CLOUD COVER       | 8        | Ci                |

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-39, 1000 HRS MDT/29 JULY 1976.

|                   |         |                   |
|-------------------|---------|-------------------|
| ELEVATION         | 3,990.0 | FEET/MSL          |
| PRESSURE          | 881.5   | MBS               |
| TEMPERATURE       | 24.0    | °C                |
| RELATIVE HUMIDITY | 62      | %                 |
| DEW POINT         | 16.3    | °C                |
| DENSITY           | 1,025.0 | GM/M <sup>3</sup> |
| WIND SPEED        | 02      | MPH               |
| WIND DIRECTION    | 240     | DEGREES           |
| CLOUD COVER       | 8       | C1                |

TABLE II. SURFACE OBSERVATIONS TAKEN AT WSD,  
1000 HRS MDT/29 JULY 1976.

## INTRODUCTION

14805 Lance, Missile Number 3207, Round Number 286 APT, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1030 HRS MDT, 29 July 1976. The scheduled launch time was 1030 HRS MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

|                   |          |                   |
|-------------------|----------|-------------------|
| ELEVATION         | 4,063.75 | FEET/MSL          |
| PRESSURE          | 878.4    | MBS               |
| TEMPERATURE       | 25.3     | °C                |
| RELATIVE HUMIDITY | 64       | %                 |
| DEW POINT         | 18.0     | °C                |
| DENSITY           | 1,018.0  | GM/M <sup>3</sup> |
| WIND SPEED        |          | CALM              |
| WIND DIRECTION    |          | CALM              |
| CLOUD COVER       | 8        | ci                |

TABLE III. SURFACE OBSERVATIONS TAKEN AT LC-39, 1030 HRS MDT/29 JULY 1976.



|                   |         |                   |
|-------------------|---------|-------------------|
| ELEVATION         | 3,990.0 | FEET/MSL          |
| PRESSURE          | 881.5   | MBS               |
| TEMPERATURE       | 24.5    | °C                |
| RELATIVE HUMIDITY | 60      | %                 |
| DEW POINT         | 16.1    | °C                |
| DENSITY           | 1,025.0 | GM/M <sup>3</sup> |
| WIND SPEED        | 03      | MPH               |
| WIND DIRECTION    | 160     | DEGREES           |
| CLOUD COVER       | 8       | CI                |

TABLE IV. SURFACE OBSERVATIONS TAKEN AT WSD,  
1030 HRS MDT/29 JULY 1976.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| SUR              |                        | CALM           |
| 100              |                        | CALM           |
| 200              | 207                    | 2.0            |
| 300              | 188                    | 3.0            |
| 400              | 224                    | 3.5            |
| 500              | 218                    | 6.5            |
| 600              | 221                    | 4.5            |
| 700              | 224                    | 4.5            |
| 800              | 225                    | 5.5            |
| 900              | 212                    | 8.0            |
| 1000             | 240                    | 4.5            |
| 1100             | 241                    | 4.0            |
| 1200             | 184                    | 2.5            |
| 1300             | 160                    | 4.0            |
| 1400             | 172                    | 5.5            |
| 1500             | 159                    | 2.0            |
| 1600             | 204                    | 1.0            |
| 1700             | 168                    | 3.5            |
| 1800             | 153                    | 5.0            |
| 1900             | 139                    | 5.0            |
| 2000             | 114                    | 5.0            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 2100             | 110                    | 5.0            |
| 2200             | 099                    | 6.0            |
| 2300             | 082                    | 7.0            |
| 2400             | 096                    | 7.5            |
| 2500             | 106                    | 9.5            |
| 2600             | 109                    | 10.0           |
| 2700             | 099                    | 10.5           |
| 2800             | 108                    | 10.0           |
| 2900             | 111                    | 10.5           |
| 3000             | 124                    | 8.5            |
| 3100             | 144                    | 8.0            |
| 3200             | 152                    | 9.0            |
| 3300             | 152                    | 7.5            |
| 3400             | 165                    | 5.5            |
| 3500             | 180                    | 5.5            |
| 3600             | 179                    | 6.0            |
| 3700             | 164                    | 5.5            |
| 3800             | 177                    | 5.0            |
| 3900             | 180                    | 5.5            |
| 4000             | 182                    | 5.5            |
| 4100             | 194                    | 4.5            |

TABLE V. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1  
RELEASED FROM LC-39, AT 0955 HRS MDT/29 JULY 1976  
14805 LANCE, MISSILE NO. 3208, ROUND NO. 285 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 4200             | 187                    | 6.0            |
| 4300             | 175                    | 11.0           |
| 4400             | 163                    | 8.5            |
| 4500             | 170                    | 6.0            |
| 4600             | 183                    | 8.5            |
| 4700             | 183                    | 8.0            |
| 4800             | 172                    | 9.0            |
| 4900             | 168                    | 9.0            |
| 5000             | 184                    | 8.5            |
| 5100             | 180                    | 10.5           |
| 5200             | 183                    | 9.0            |
| 5300             | 194                    | 10.0           |
| 5400             | 193                    | 10.0           |
| 5500             | 204                    | 8.0            |
| 5600             | 205                    | 11.0           |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 5700             | 202                    | 12.0           |
| 5800             | 201                    | 12.0           |
| 5900             | 200                    | 12.0           |
| 6000             | 192                    | 11.0           |
| 6100             | 195                    | 13.5           |
| 6200             | 204                    | 12.0           |
| 6300             | 192                    | 11.0           |
| 6400             | 195                    | 12.0           |
| 6500             | 200                    | 9.5            |
| 6600             | 182                    | 10.0           |
| 6700             | 189                    | 11.5           |
| 6800             | 189                    | 11.5           |
| 6900             | 191                    | 13.5           |
| 7000             | 194                    | 10.0           |
| 7100             | 200                    | 9.0            |

TABLE V. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.



| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| SUR              |                        | CALM           |
| 100              |                        | CALM           |
| 200              |                        | CALM           |
| 300              | 330                    | 1.5            |
| 400              | 230                    | 5.5            |
| 500              | 202                    | 7.5            |
| 600              | 218                    | 4.0            |
| 700              | 202                    | 4.5            |
| 800              | 270                    | 1.5            |
| 900              | 170                    | 2.5            |
| 1000             | 035                    | 2.0            |
| 1100             | 343                    | 3.5            |
| 1200             | 293                    | 3.5            |
| 1300             | 270                    | 5.0            |
| 1400             | 203                    | 5.0            |
| 1500             | 183                    | 7.5            |
| 1600             | 195                    | 5.5            |
| 1700             | 188                    | 6.0            |
| 1800             | 216                    | 1.0            |
| 1900             | 203                    | 3.0            |
| 2000             | 175                    | 6.0            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 2100             | 152                    | 9.0            |
| 2200             | 140                    | 8.0            |
| 2300             | 092                    | 6.5            |
| 2400             | 100                    | 9.0            |
| 2500             | 096                    | 9.5            |
| 2600             | 084                    | 8.5            |
| 2700             | 090                    | 10.0           |
| 2800             | 103                    | 12.0           |
| 2900             | 104                    | 12.5           |
| 3000             | 112                    | 13.5           |
| 3100             | 143                    | 10.0           |
| 3200             | 141                    | 11.0           |
| 3300             | 157                    | 10.5           |
| 3400             | 146                    | 5.5            |
| 3500             | 169                    | 10.5           |
| 3600             | 160                    | 8.0            |
| 3700             | 182                    | 12.5           |
| 3800             | 204                    | 10.0           |
| 3900             | 151                    | 4.0            |
| 4000             | 209                    | 7.0            |
| 4100             | 214                    | 7.0            |

TABLE VI. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 2  
RELEASED FROM LC-39, AT 1003 HRS MDT/29 JULY 1976  
14805 LANCE, MISSILE NO. 3208, ROUND NO. 285 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 4200             | 221                    | 5.5            |
| 4300             | 163                    | 9.5            |
| 4400             | 181                    | 6.5            |
| 4500             | 171                    | 2.0            |
| 4600             | 154                    | 5.5            |
| 4700             | 209                    | 9.0            |
| 4800             | 203                    | 11.5           |
| 4900             | 196                    | 11.5           |
| 5000             | 193                    | 10.0           |
| 5100             | 180                    | 12.5           |
| 5200             | 184                    | 16.5           |
| 5300             | 177                    | 13.5           |
| 5400             | 179                    | 9.5            |
| 5500             | 200                    | 16.5           |
| 5600             | 208                    | 12.5           |
| 5700             | 206                    | 15.0           |
| 5800             | 196                    | 14.5           |
| 5900             | 190                    | 13.0           |
| 6000             | 200                    | 14.5           |
| 6100             | 180                    | 14.5           |
| 6200             | 201                    | 11.5           |
| 6300             | 180                    | 9.5            |
| 6400             | 193                    | 11.0           |
| 6500             | 189                    | 7.5            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 6600             | 175                    | 10.0           |
| 6700             | 188                    | 12.0           |
| 6800             | 188                    | 12.0           |
| 6900             | 183                    | 11.5           |
| 7000             | 180                    | 12.0           |
| 7100             | 184                    | 12.5           |
| 7200             | 190                    | 12.5           |
| 7300             | 207                    | 14.5           |
| 7400             | 196                    | 12.0           |
| 7500             | 193                    | 8.0            |
| 7600             | 194                    | 10.0           |
| 7700             | 204                    | 15.0           |
| 7800             | 200                    | 14.0           |
| 7900             | 196                    | 11.0           |
| 8000             | 202                    | 13.0           |
| 8100             | 201                    | 14.5           |
| 8200             | 189                    | 15.5           |
| 8300             | 197                    | 17.5           |
| 8400             | 201                    | 14.0           |
| 8500             | 196                    | 16.0           |
| 8600             | 204                    | 13.5           |
| 8700             | 206                    | 15.5           |
| 8800             | 199                    | 18.5           |
| 8900             | 204                    | 18.0           |

TABLE VI. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 9000             | 199                    | 19.0           |
| 9100             | 197                    | 18.0           |
| 9200             | 196                    | 20.5           |
| 9300             | 193                    | 21.0           |
| 9400             | 194                    | 18.0           |
| 9500             | 196                    | 19.0           |
| 9600             | 189                    | 20.0           |
| 9700             | 196                    | 18.5           |
| 9800             | 191                    | 15.5           |
| 9900             | 197                    | 15.0           |
| 10000            | 198                    | 13.0           |
| 10100            | 203                    | 15.0           |
| 10200            | 211                    | 16.5           |
| 10300            | 205                    | 19.5           |
| 10400            | 228                    | 13.5           |
| 10500            | 233                    | 9.5            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 10600            | 207                    | 11.0           |
| 10700            | 219                    | 9.5            |
| 10800            | 223                    | 15.5           |
| 10900            | 195                    | 12.5           |
| 11000            | 185                    | 13.5           |
| 11100            | 217                    | 9.5            |
| 11200            | 204                    | 6.0            |
| 11300            | 199                    | 10.0           |
| 11400            | 212                    | 9.5            |
| 11500            | 205                    | 9.5            |
| 11600            | 236                    | 11.5           |
| 11700            | 221                    | 11.5           |
| 11800            | 218                    | 12.0           |
| 11900            | 238                    | 13.0           |
| 12000            | 204                    | 12.0           |

TABLE VI. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.



| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) | HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| SUR              |                        | CALM           | 2100             | 099                    | 6.0            |
| 100              | 084                    | 1.0            | 2200             | 107                    | 10.0           |
| 200              | 180                    | 0.5            | 2300             | 108                    | 10.5           |
| 300              | 317                    | 2.5            | 2400             | 109                    | 10.0           |
| 400              | 297                    | 3.5            | 2500             | 113                    | 11.5           |
| 500              | 262                    | 1.5            | 2600             | 126                    | 8.0            |
| 600              | 184                    | 1.5            | 2700             | 126                    | 10.5           |
| 700              | 252                    | 2.0            | 2800             | 137                    | 12.0           |
| 800              | 109                    | 4.0            | 2900             | 131                    | 12.5           |
| 900              | 196                    | 6.0            | 3000             | 148                    | 12.0           |
| 1000             | 184                    | 7.0            | 3100             | 145                    | 8.0            |
| 1100             | 180                    | 4.0            | 3200             | 148                    | 11.5           |
| 1200             | 128                    | 2.5            | 3300             | 188                    | 8.0            |
| 1300             | 122                    | 4.0            | 3400             | 208                    | 6.5            |
| 1400             | 113                    | 8.0            | 3500             | 209                    | 11.0           |
| 1500             | 107                    | 7.0            | 3600             | 208                    | 14.5           |
| 1600             | 122                    | 4.0            | 3700             | 213                    | 13.5           |
| 1700             | 164                    | 5.5            | 3800             | 193                    | 11.5           |
| 1800             | 122                    | 8.5            | 3900             | 170                    | 9.5            |
| 1900             | 090                    | 7.0            | 4000             | 170                    | 7.0            |
| 2000             | 078                    | 5.0            | 4100             | 164                    | 11.5           |

TABLE VII. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 3  
RELEASED FROM LC-39, AT 1025 HRS MDT/29 JULY 1976  
14805 LANCE, MISSILE NO. 3207, ROUND NO. 286 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 4200             | 175                    | 11.5           |
| 4300             | 172                    | 10.0           |
| 4400             | 193                    | 6.5            |
| 4500             | 198                    | 7.5            |
| 4600             | 204                    | 8.5            |
| 4700             | 205                    | 8.5            |
| 4800             | 197                    | 9.0            |
| 4900             | 205                    | 9.5            |
| 5000             | 205                    | 10.0           |
| 5100             | 213                    | 10.5           |
| 5200             | 208                    | 11.0           |
| 5300             | 205                    | 11.0           |
| 5400             | 181                    | 14.5           |
| 5500             | 193                    | 16.5           |
| 5600             | 201                    | 17.0           |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 5700             | 205                    | 19.0           |
| 5800             | 217                    | 17.0           |
| 5900             | 205                    | 17.5           |
| 6000             | 204                    | 18.5           |
| 6100             | 198                    | 15.5           |
| 6200             | 190                    | 14.0           |
| 6300             | 197                    | 9.5            |
| 6400             | 219                    | 9.0            |
| 6500             | 196                    | 10.0           |
| 6600             | 196                    | 11.0           |
| 6700             | 192                    | 12.5           |
| 6800             | 187                    | 13.0           |
| 6900             | 189                    | 12.0           |
| 7000             | 180                    | 11.5           |

TABLE VII. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| SUR              |                        | CALM           |
| 100              |                        | CALM           |
| 200              |                        | CALM           |
| 300              | 319                    | 3.0            |
| 400              | 094                    | 1.5            |
| 500              | 295                    | 2.0            |
| 600              | 248                    | 2.5            |
| 700              | 247                    | 2.5            |
| 800              | 254                    | 0.5            |
| 900              | 185                    | 1.0            |
| 1000             | 265                    | 3.5            |
| 1100             | 254                    | 5.0            |
| 1200             | 235                    | 6.0            |
| 1300             | 250                    | 5.0            |
| 1400             | 261                    | 3.5            |
| 1500             | 281                    | 3.5            |
| 1600             | 239                    | 5.5            |
| 1700             | 233                    | 6.5            |
| 1800             | 216                    | 6.0            |
| 1900             | 224                    | 9.5            |
| 2000             | 211                    | 6.0            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 2100             | 187                    | 3.5            |
| 2200             | 228                    | 6.5            |
| 2300             | 200                    | 2.5            |
| 2400             | 183                    | 7.5            |
| 2500             | 183                    | 8.5            |
| 2600             | 135                    | 7.0            |
| 2700             | 123                    | 10.5           |
| 2800             | 124                    | 12.0           |
| 2900             | 122                    | 14.0           |
| 3000             | 132                    | 12.5           |
| 3100             | 137                    | 11.0           |
| 3200             | 153                    | 11.5           |
| 3300             | 181                    | 9.5            |
| 3400             | 204                    | 7.0            |
| 3500             | 189                    | 5.0            |
| 3600             | 181                    | 7.0            |
| 3700             | 221                    | 8.0            |
| 3800             | 218                    | 9.5            |
| 3900             | 197                    | 6.5            |
| 4000             | 187                    | 6.5            |
| 4100             | 191                    | 7.5            |

TABLE VIII. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 4  
RELEASED FROM LC-39, AT 1032 HRS MDT/29 JULY 1976  
14805 LANCE, MISSILE NO. 3207, ROUND NO. 286 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.87 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) | HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| 4200             | 175                    | 5.0            | 6600             | 181                    | 8.0            |
| 4300             | 189                    | 6.0            | 6700             | 197                    | 9.5            |
| 4400             | 208                    | 7.5            | 6800             | 197                    | 9.5            |
| 4500             | 216                    | 7.0            | 6900             | 197                    | 8.0            |
| 4600             | 219                    | 8.0            | 7000             | 183                    | 10.0           |
| 4700             | 228                    | 9.5            | 7100             | 180                    | 9.5            |
| 4800             | 219                    | 13.0           | 7200             | 180                    | 11.5           |
| 4900             | 198                    | 12.5           | 7300             | 178                    | 11.0           |
| 5000             | 204                    | 11.5           | 7400             | 194                    | 7.5            |
| 5100             | 202                    | 12.5           | 7500             | 195                    | 11.0           |
| 5200             | 210                    | 12.5           | 7600             | 191                    | 12.5           |
| 5300             | 209                    | 13.0           | 7700             | 188                    | 11.5           |
| 5400             | 209                    | 11.0           | 7800             | 190                    | 14.0           |
| 5500             | 205                    | 12.5           | 7900             | 191                    | 12.0           |
| 5600             | 200                    | 15.0           | 8000             | 188                    | 13.0           |
| 5700             | 204                    | 13.5           | 8100             | 193                    | 15.5           |
| 5800             | 205                    | 12.5           | 8200             | 198                    | 16.0           |
| 5900             | 198                    | 10.0           | 8300             | 195                    | 13.5           |
| 6000             | 205                    | 13.5           | 8400             | 190                    | 15.5           |
| 6100             | 198                    | 12.0           | 8500             | 198                    | 16.5           |
| 6200             | 200                    | 11.0           | 8600             | 200                    | 19.5           |
| 6300             | 201                    | 14.0           | 8700             | 199                    | 17.5           |
| 6400             | 203                    | 10.5           | 8800             | 206                    | 15.5           |
| 6500             | 195                    | 8.0            | 8900             | 200                    | 16.5           |

TABLE VIII. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.



| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 9000             | 195                    | 16.0           |
| 9100             | 196                    | 17.0           |
| 9200             | 207                    | 16.5           |
| 9300             | 198                    | 16.0           |
| 9400             | 190                    | 20.5           |
| 9500             | 193                    | 19.0           |
| 9600             | 199                    | 18.0           |
| 9700             | 209                    | 16.0           |
| 9800             | 197                    | 16.5           |
| 9900             | 193                    | 15.5           |
| 10000            | 201                    | 16.0           |
| 10100            | 200                    | 15.5           |
| 10200            | 205                    | 12.0           |
| 10300            | 208                    | 12.0           |
| 10400            | 203                    | 14.0           |
| 10500            | 213                    | 9.5            |

| HEIGHT<br>(FEET) | DIRECTION<br>(DEGREES) | SPEED<br>(MPH) |
|------------------|------------------------|----------------|
| 10600            | 194                    | 10.0           |
| 10700            | 187                    | 13.0           |
| 10800            | 201                    | 11.5           |
| 10900            | 188                    | 11.0           |
| 11000            | 211                    | 11.0           |
| 11100            | 208                    | 11.0           |
| 11200            | 209                    | 13.0           |
| 11300            | 205                    | 11.5           |
| 11400            | 185                    | 12.5           |
| 11500            | 190                    | 12.5           |
| 11600            | 201                    | 13.0           |
| 11700            | 223                    | 10.5           |
| 11800            | 209                    | 7.0            |
| 11900            | 194                    | 11.0           |
| 12000            | 213                    | 10.5           |

TABLE VIII. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 157

SIGNIFICANT LEVEL DATA  
2110040157  
STATION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE IX

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--|----------------|------------------------|----------------------|
|  | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 851.4  | 22.0           | 14.9                   | 64.0                 |
| 850.4  | 20.1           | 13.1                   | 64.0                 |
| 824.8  | 17.5           | 10.1                   | 62.0                 |
| 751.3  | 15.5           | 4.8                    | 49.0                 |
| 700.4  | 10.6           | 2.7                    | 58.0                 |
| 599.3  | 2.6            | -7.6                   | 47.0                 |
| 515.8  | -6.5           | -15.2                  | 50.0                 |
| 500.8  | -6.5           | -19.4                  | 35.0                 |
| 490.3  | -6.7           | -26.4                  | 19.0                 |
| 458.3  | -10.5          | -24.7                  | 30.0                 |
| 437.3  | -13.1          | -31.8                  | 19.0                 |
| 400.3  | -18.3          | -36.2                  | 19.0                 |
| 366.3  | -20.6          | -39.2                  | 17.0                 |
| 300.4  | -32.6          | -49.2                  | 17.0                 |
| 250.3  | -42.9          |                        |                      |
| 200.3  | -54.6          |                        |                      |
| 166.8  | -63.3          |                        |                      |
| 150.1  | -66.5          |                        |                      |
| 120.3  | -67.5          |                        |                      |
| 100.2  | -69.4          |                        |                      |
| 70.0   | -61.1          |                        |                      |
| 57.3   | -56.2          |                        |                      |
| 50.0   | -55.9          |                        |                      |
| 30.1   | -49.4          |                        |                      |
| 28.3   | -47.3          |                        |                      |
| 20.0   | -46.6          |                        |                      |
| 11.8   | -41.7          |                        |                      |
| 10.0   | -36.4          |                        |                      |
| 9.5  | -36.2          |                        |                      |

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76 0940 HRS MDT  
ASCENSION NO. 157

UPPER AIR DATA  
2110040157  
STATION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE X

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | AIR TEMPERATURE DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|------------------------------------|-------------------|------------------------|----------------------|-----------------------|-----------------------|---------------------|
| 4940.0                      | 851.4              | 22.0                               | 64.0              | 997.3                  | 671.8                | 360.0                 | 1.9                   | 1.000296            |
| 5000.0                      | 849.6              | 20.0                               | 63.9              | 1002.8                 | 669.3                | .1                    | 1.9                   | 1.000290            |
| 5500.0                      | 834.7              | 18.5                               | 62.8              | 990.9                  | 667.4                | 1.1                   | 1.5                   | 1.000291            |
| 6000.0                      | 820.0              | 17.4                               | 61.2              | 977.8                  | 665.9                | 2.7                   | 1.2                   | 1.000272            |
| 6500.0                      | 805.5              | 17.0                               | 58.7              | 962.0                  | 665.4                | 5.8                   | .8                    | 1.000266            |
| 7000.0                      | 791.2              | 16.6                               | 56.2              | 946.4                  | 664.8                | 90.2                  | .5                    | 1.000259            |
| 7500.0                      | 777.2              | 16.2                               | 53.7              | 931.2                  | 664.3                | 133.3                 | 1.5                   | 1.000252            |
| 8000.0                      | 763.5              | 15.8                               | 51.2              | 916.1                  | 663.8                | 120.7                 | 2.5                   | 1.000246            |
| 8500.0                      | 750.0              | 15.4                               | 49.2              | 901.6                  | 663.2                | 112.7                 | 3.6                   | 1.000240            |
| 9000.0                      | 736.5              | 14.1                               | 51.5              | 889.4                  | 661.7                | 109.9                 | 4.7                   | 1.000236            |
| 9500.0                      | 723.3              | 12.8                               | 53.9              | 877.4                  | 660.2                | 108.3                 | 5.8                   | 1.000233            |
| 10000.0                     | 710.4              | 11.6                               | 56.2              | 865.5                  | 658.7                | 116.3                 | 5.9                   | 1.000229            |
| 10500.0                     | 697.6              | 10.4                               | 57.7              | 853.7                  | 657.3                | 125.5                 | 6.1                   | 1.000225            |
| 11000.0                     | 684.8              | 9.4                                | 56.4              | 841.0                  | 656.1                | 135.4                 | 7.3                   | 1.000219            |
| 11500.0                     | 672.2              | 8.5                                | 55.1              | 828.6                  | 654.9                | 143.1                 | 8.4                   | 1.000214            |
| 12000.0                     | 659.9              | 7.5                                | 53.8              | 816.3                  | 653.7                | 150.0                 | 9.3                   | 1.000209            |
| 12500.0                     | 647.8              | 6.6                                | 52.5              | 804.3                  | 652.6                | 151.1                 | 9.0                   | 1.000204            |
| 13000.0                     | 635.9              | 5.6                                | 51.2              | 792.4                  | 651.4                | 149.8                 | 8.1                   | 1.000199            |
| 13500.0                     | 624.2              | 4.7                                | 49.9              | 780.6                  | 650.2                | 130.0                 | 7.6                   | 1.000195            |
| 14000.0                     | 612.8              | 3.7                                | 48.6              | 769.1                  | 649.0                | 109.6                 | 8.1                   | 1.000191            |
| 14500.0                     | 601.5              | 2.8                                | 47.3              | 757.7                  | 647.9                | 100.7                 | 9.7                   | 1.000186            |
| 15000.0                     | 590.2              | 1.7                                | 47.3              | 746.6                  | 646.5                | 96.4                  | 11.0                  | 1.000183            |
| 15500.0                     | 579.0              | .5                                 | 47.7              | 735.6                  | 645.1                | 99.7                  | 11.4                  | 1.000179            |
| 16000.0                     | 568.1              | -.6                                | 48.1              | 724.8                  | 643.7                | 101.6                 | 12.0                  | 1.000176            |
| 16500.0                     | 557.3              | -1.8                               | 48.5              | 714.2                  | 642.3                | 101.8                 | 12.9                  | 1.000172            |
| 17000.0                     | 546.7              | -3.0                               | 48.8              | 703.8                  | 640.9                | 101.1                 | 14.0                  | 1.000169            |
| 17500.0                     | 536.4              | -4.1                               | 49.2              | 693.5                  | 639.5                | 99.8                  | 15.2                  | 1.000166            |
| 18000.0                     | 526.2              | -5.3                               | 49.6              | 683.4                  | 638.1                | 98.9                  | 15.7                  | 1.000163            |
| 18500.0                     | 516.3              | -6.4                               | 50.0              | 673.4                  | 636.7                | 98.0                  | 16.0                  | 1.000160            |
| 19000.0                     | 506.3              | -6.5                               | 40.6              | 660.7                  | 636.5                | 95.5                  | 15.8                  | 1.000155            |

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76 0940 HRS MDT  
ASCENSION NO. 147

UPPER AIR DATA  
2110040157  
STALLION

WSTM SITE COORDINATES  
423783.00 FEET E  
731403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>DEMPPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 19500.0                           | 496.6                 | -6.6  | 28.6                 | 648.4                        | 636.3                      | 92.9                                  | 15.3           | 1.000150                  |
| 20000.0                           | 487.0                 | -7.1  | 20.1                 | 637.3                        | 635.6                      | 89.2                                  | 13.5           | 1.000146                  |
| 20500.0                           | 477.5                 | -8.2  | 23.3                 | 627.5                        | 634.3                      | 84.3                                  | 11.3           | 1.000144                  |
| 21000.0                           | 468.2                 | -9.3  | 26.5                 | 617.8                        | 633.0                      | 76.4                                  | 8.4            | 1.000142                  |
| 21500.0                           | 459.2                 | -10.4   | 29.7                 | 608.3                        | 631.7                      | 65.4                                  | 6.5            | 1.000140                  |
| 22000.0                           | 450.1                 | -11.5   | 25.8                 | 599.0                        | 630.3                      | 57.5                                  | 6.2            | 1.000137                  |
| 22500.0                           | 441.3                 | -12.6   | 21.1                 | 589.8                        | 629.0                      | 54.3                                  | 6.7            | 1.000134                  |
| 23000.0                           | 432.5                 | -13.7   | 19.0                 | 580.7                        | 627.6                      | 57.1                                  | 8.3            | 1.000132                  |
| 23500.0                           | 423.9                 | -14.9   | 19.0                 | 571.7                        | 626.1                      | 60.4                                  | 9.9            | 1.000129                  |
| 24000.0                           | 415.5                 | -16.1   | 19.0                 | 562.9                        | 624.7                      | 64.2                                  | 11.4           | 1.000127                  |
| 24500.0                           | 407.2                 | -17.3   | 19.0                 | 554.2                        | 623.2                      | 65.9                                  | 12.2           | 1.000125                  |
| 25000.0                           | 399.0                 | -18.4   | 18.9                 | 545.5                        | 621.9                      | 66.3                                  | 12.2           | 1.000123                  |
| 25500.0                           | 391.0                 | -18.9   | 18.5                 | 535.6                        | 621.3                      | 67.0                                  | 12.5           | 1.000121                  |
| 26000.0                           | 383.0                 | -19.4   | 18.0                 | 525.8                        | 620.6                      | 67.7                                  | 12.8           | 1.000119                  |
| 26500.0                           | 375.3                 | -20.0   | 17.5                 | 516.3                        | 619.9                      | 70.6                                  | 14.3           | 1.000116                  |
| 27000.0                           | 367.7                 | -20.5   | 17.1                 | 506.9                        | 619.3                      | 74.8                                  | 17.0           | 1.000114                  |
| 27500.0                           | 360.1                 | -21.6   | 17.0                 | 498.6                        | 617.9                      | 76.8                                  | 19.3           | 1.000112                  |
| 28000.0                           | 352.6                 | -22.9   | 17.0                 | 490.7                        | 616.3                      | 76.7                                  | 20.9           | 1.000110                  |
| 28500.0                           | 345.2                 | -24.2   | 17.0                 | 483.0                        | 614.8                      | 75.5                                  | 21.9           | 1.000108                  |
| 29000.0                           | 338.0                 | -25.5   | 17.0                 | 475.4                        | 613.2                      | 72.1                                  | 21.7           | 1.000107                  |
| 29500.0                           | 331.0                 | -26.7   | 17.0                 | 467.9                        | 611.6                      | 69.2                                  | 21.4           | 1.000105                  |
| 30000.0                           | 324.1                 | -28.0   | 17.0                 | 460.5                        | 610.0                      | 66.9                                  | 21.0           | 1.000103                  |
| 30500.0                           | 317.4                 | -29.3   | 17.0                 | 453.3                        | 608.4                      | 64.7                                  | 21.2           | 1.000102                  |
| 31000.0                           | 310.8                 | -30.5   | 17.0                 | 446.2                        | 606.8                      | 62.7                                  | 22.6           | 1.000100                  |
| 31500.0                           | 304.3                 | -31.8   | 17.0                 | 439.2                        | 605.2                      | 61.7                                  | 23.9           | 1.000098                  |
| 32000.0                           | 297.8                 | -33.1   | 16.2**               | 432.2                        | 603.6                      | 61.9                                  | 25.1           | 1.000097                  |
| 32500.0                           | 291.4                 | -34.3   | 14.2**               | 425.0                        | 602.1                      | 62.8                                  | 26.3           | 1.000095                  |
| 33000.0                           | 285.0                 | -35.6   | 12.1**               | 417.9                        | 600.5                      | 64.5                                  | 27.5           | 1.000093                  |
| 33500.0                           | 278.8                 | -36.8   | 10.0**               | 410.9                        | 598.9                      | 65.5                                  | 28.3           | 1.000092                  |
| 34000.0                           | 272.7                 | -38.1   | 8.0**                | 404.1                        | 597.3                      | 65.4                                  | 28.4           | 1.000090                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76 0940 HRS MDT  
ASCENSION NO. 147

UPPER AIR DATA  
2110040157  
STALLION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 34500.0                           | 266.8                 | -39.3          | -63.1                  | 5.9**                | 397.4                        | 595.8                      | 64.6                     | 27.2           | 1.000089                  |
| 35000.0                           | 261.0                 | -40.5          | -67.1                  | 3.9**                | 390.8                        | 594.2                      | 62.3                     | 24.0           | 1.000087                  |
| 35500.0                           | 255.3                 | -41.8          | -73.1                  | 1.8**                | 384.4                        | 592.6                      | 60.4                     | 21.6           | 1.000086                  |
| 36000.0                           | 249.7                 | -43.0          |                        |                      | 378.0                        | 591.0                      | 59.1                     | 20.0           | 1.000084                  |
| 36500.0                           | 244.0                 | -44.2          |                        |                      | 371.3                        | 589.4                      | 60.1                     | 18.1           | 1.000083                  |
| 37000.0                           | 238.4                 | -45.5          |                        |                      | 364.8                        | 587.9                      | 63.3                     | 16.0           | 1.000081                  |
| 37500.0                           | 233.0                 | -46.7          |                        |                      | 358.4                        | 586.3                      | 64.3                     | 13.8           | 1.000080                  |
| 38000.0                           | 227.7                 | -47.9          |                        |                      | 352.1                        | 584.7                      | 62.3                     | 11.3           | 1.000078                  |
| 38500.0                           | 222.5                 | -49.1          |                        |                      | 345.9                        | 583.1                      | 57.8                     | 9.5            | 1.000077                  |
| 39000.0                           | 217.4                 | -50.3          |                        |                      | 339.8                        | 581.6                      | 49.8                     | 8.4            | 1.000076                  |
| 39500.0                           | 212.4                 | -51.5          |                        |                      | 333.9                        | 580.0                      | 41.3                     | 7.5            | 1.000074                  |
| 40000.0                           | 207.6                 | -52.7          |                        |                      | 328.0                        | 578.4                      | 41.4                     | 6.9            | 1.000073                  |
| 40500.0                           | 202.8                 | -53.9          |                        |                      | 322.3                        | 576.8                      | 41.6                     | 6.3            | 1.000072                  |
| 41000.0                           | 198.1                 | -55.1          |                        |                      | 316.5                        | 575.2                      | 44.4                     | 6.4            | 1.000070                  |
| 41500.0                           | 193.4                 | -56.3          |                        |                      | 310.6                        | 573.7                      | 47.5                     | 6.7            | 1.000069                  |
| 42000.0                           | 188.7                 | -57.4          |                        |                      | 304.8                        | 572.2                      | 50.6                     | 7.2            | 1.000068                  |
| 42500.0                           | 184.2                 | -58.6          |                        |                      | 299.1                        | 570.7                      | 53.4                     | 7.8            | 1.000067                  |
| 43000.0                           | 179.8                 | -59.7          |                        |                      | 293.5                        | 569.1                      | 56.0                     | 8.6            | 1.000065                  |
| 43500.0                           | 175.5                 | -60.9          |                        |                      | 288.1                        | 567.6                      | 59.2                     | 9.7            | 1.000064                  |
| 44000.0                           | 171.3                 | -62.0          |                        |                      | 282.7                        | 566.1                      | 61.6                     | 10.9           | 1.000063                  |
| 44500.0                           | 167.2                 | -63.2          |                        |                      | 277.5                        | 564.5                      | 63.3                     | 12.0           | 1.000062                  |
| 45000.0                           | 163.1                 | -64.0          |                        |                      | 271.7                        | 563.4                      | 64.7                     | 13.2           | 1.000061                  |
| 45500.0                           | 159.1                 | -64.7          |                        |                      | 266.0                        | 562.4                      | 69.0                     | 14.0           | 1.000059                  |
| 46000.0                           | 155.2                 | -65.5          |                        |                      | 260.4                        | 561.4                      | 73.7                     | 14.9           | 1.000058                  |
| 46500.0                           | 151.4                 | -66.2          |                        |                      | 254.9                        | 560.4                      | 77.9                     | 15.5           | 1.000057                  |
| 47000.0                           | 147.7                 | -66.6          |                        |                      | 249.0                        | 559.9                      | 81.9                     | 16.0           | 1.000055                  |
| 47500.0                           | 144.0                 | -66.7          |                        |                      | 243.0                        | 559.8                      | 84.9                     | 16.4           | 1.000054                  |
| 48000.0                           | 140.4                 | -66.8          |                        |                      | 237.1                        | 559.6                      | 85.6                     | 16.4           | 1.000053                  |
| 48500.0                           | 137.0                 | -66.9          |                        |                      | 231.3                        | 559.5                      | 86.2                     | 16.3           | 1.000052                  |
| 49000.0                           | 133.6                 | -67.0          |                        |                      | 225.7                        | 559.3                      | 87.6                     | 16.2           | 1.000050                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 157

0940 HRS MDT

UPPER AIR DATA  
2110040157  
STALLION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | "IND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 49500.0                           | 130.2                 | -67.1                                       |                      | 220.2                        | 559.2                      | 88.9                                  | 16.2           | 1.000049                  |
| 50000.0                           | 127.0                 | -67.3                                       |                      | 214.9                        | 559.0                      | 90.4                                  | 16.0           | 1.000048                  |
| 50500.0                           | 123.9                 | -67.4                                       |                      | 209.7                        | 558.9                      | 92.1                                  | 15.8           | 1.000047                  |
| 51000.0                           | 120.8                 | -67.5                                       |                      | 204.6                        | 558.7                      | 93.8                                  | 15.6           | 1.000046                  |
| 51500.0                           | 117.8                 | -67.7                                       |                      | 199.7                        | 558.4                      | 96.2                                  | 15.3           | 1.000044                  |
| 52000.0                           | 114.8                 | -68.0                                       |                      | 195.0                        | 558.0                      | 98.7                                  | 15.1           | 1.000043                  |
| 52500.0                           | 112.0                 | -68.2                                       |                      | 190.4                        | 557.7                      | 99.5                                  | 14.0           | 1.000042                  |
| 53000.0                           | 109.2                 | -68.5                                       |                      | 185.8                        | 557.3                      | 95.4                                  | 10.9           | 1.000041                  |
| 53500.0                           | 106.4                 | -68.8                                       |                      | 181.4                        | 556.9                      | 88.0                                  | 8.0            | 1.000040                  |
| 54000.0                           | 103.8                 | -69.0                                       |                      | 177.1                        | 556.6                      | 70.2                                  | 6.6            | 1.000039                  |
| 54500.0                           | 101.2                 | -69.3                                       |                      | 172.9                        | 556.2                      | 49.3                                  | 7.6            | 1.000039                  |
| 55000.0                           | 98.7                  | -69.0                                       |                      | 168.5                        | 556.6                      | 34.5                                  | 9.2            | 1.000038                  |
| 55500.0                           | 96.3                  | -68.5                                       |                      | 163.9                        | 557.4                      | 45.4                                  | 12.7           | 1.000036                  |
| 56000.0                           | 93.9                  | -67.9                                       |                      | 159.4                        | 558.1                      | 53.2                                  | 16.8           | 1.000035                  |
| 56500.0                           | 91.6                  | -67.3                                       |                      | 155.0                        | 558.9                      | 57.9                                  | 19.6           | 1.000035                  |
| 57000.0                           | 89.3                  | -66.7                                       |                      | 150.8                        | 559.7                      | 62.0                                  | 19.2           | 1.000034                  |
| 57500.0                           | 87.1                  | -66.2                                       |                      | 146.7                        | 560.5                      | 66.3                                  | 18.8           | 1.000033                  |
| 58000.0                           | 85.0                  | -65.6                                       |                      | 142.7                        | 561.3                      | 72.8                                  | 18.3           | 1.000032                  |
| 58500.0                           | 82.9                  | -65.0                                       |                      | 138.8                        | 562.0                      | 81.4                                  | 17.9           | 1.000031                  |
| 59000.0                           | 80.9                  | -64.4                                       |                      | 135.0                        | 562.8                      | 90.1                                  | 17.9           | 1.000030                  |
| 59500.0                           | 78.9                  | -63.9                                       |                      | 131.3                        | 563.6                      | 91.5                                  | 17.5           | 1.000029                  |
| 60000.0                           | 76.9                  | -63.3                                       |                      | 127.7                        | 564.4                      | 90.0                                  | 16.9           | 1.000028                  |
| 60500.0                           | 75.1                  | -62.7                                       |                      | 124.3                        | 565.1                      | 88.5                                  | 16.3           | 1.000028                  |
| 61000.0                           | 73.2                  | -62.1                                       |                      | 120.9                        | 565.9                      | 86.8                                  | 14.7           | 1.000027                  |
| 61500.0                           | 71.4                  | -61.6                                       |                      | 117.6                        | 566.7                      | 84.7                                  | 13.1           | 1.000026                  |
| 62000.0                           | 69.7                  | -61.0                                       |                      | 114.4                        | 567.5                      | 84.0                                  | 12.1           | 1.000025                  |
| 62500.0                           | 68.0                  | -60.4                                       |                      | 111.4                        | 568.2                      | 89.7                                  | 13.7           | 1.000025                  |
| 63000.0                           | 66.4                  | -59.8                                       |                      | 108.4                        | 569.0                      | 94.1                                  | 15.4           | 1.000024                  |
| 63500.0                           | 64.8                  | -59.2                                       |                      | 105.5                        | 569.8                      | 96.5                                  | 17.1           | 1.000023                  |
| 64000.0                           | 63.3                  | -58.6                                       |                      | 102.7                        | 570.6                      | 97.5                                  | 18.6           | 1.000023                  |

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76 0940 HRS MDT  
ASCENSION NO. 147

UPPER AIR DATA  
2110040157  
STALLION

WSTM SITE COORDINATES  
403783.00 FEET E  
791403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|---------------------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEAPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS |                                       |                |                           |
| 64500.0                           | 61.8                  | -58.0          |                        |                      | 100.0                        | 571.4             |       | 98.3                                  | 20.1           | 1.000022                  |
| 65000.0                           | 60.3                  | -57.4          |                        |                      | 97.4                         | 572.2             |       | 98.5                                  | 20.6           | 1.000022                  |
| 65500.0                           | 58.9                  | -56.9          |                        |                      | 94.8                         | 573.0             |       | 98.6                                  | 20.9           | 1.000021                  |
| 66000.0                           | 57.4                  | -56.3          |                        |                      | 92.3                         | 573.7             |       | 98.7                                  | 21.1           | 1.000021                  |
| 66500.0                           | 56.1                  | -56.2          |                        |                      | 90.1                         | 573.9             |       | 99.1                                  | 19.8           | 1.000020                  |
| 67000.0                           | 54.8                  | -56.1          |                        |                      | 87.9                         | 574.0             |       | 99.6                                  | 18.4           | 1.000020                  |
| 67500.0                           | 53.5                  | -56.0          |                        |                      | 85.8                         | 574.0             |       | 100.7                                 | 17.3           | 1.000019                  |
| 68000.0                           | 52.2                  | -56.0          |                        |                      | 83.8                         | 574.1             |       | 102.8                                 | 16.7           | 1.000019                  |
| 68500.0                           | 51.0                  | -55.9          |                        |                      | 81.8                         | 574.2             |       | 105.1                                 | 16.2           | 1.000018                  |
| 69000.0                           | 49.8                  | -55.8          |                        |                      | 79.8                         | 574.3             |       | 106.4                                 | 15.0           | 1.000018                  |
| 69500.0                           | 48.7                  | -55.5          |                        |                      | 77.9                         | 574.7             |       | 107.3                                 | 13.6           | 1.000017                  |
| 70000.0                           | 47.5                  | -55.2          |                        |                      | 76.0                         | 575.1             |       | 108.5                                 | 12.3           | 1.000017                  |
| 70500.0                           | 46.4                  | -54.9          |                        |                      | 74.1                         | 575.5             |       | 105.6                                 | 13.2           | 1.000016                  |
| 71000.0                           | 45.3                  | -54.6          |                        |                      | 72.3                         | 575.9             |       | 103.1                                 | 14.2           | 1.000016                  |
| 71500.0                           | 44.3                  | -54.3          |                        |                      | 70.5                         | 576.3             |       | 99.8                                  | 15.5           | 1.000016                  |
| 72000.0                           | 43.3                  | -54.0          |                        |                      | 68.9                         | 576.7             |       | 94.7                                  | 18.0           | 1.000015                  |
| 72500.0                           | 42.3                  | -53.7          |                        |                      | 67.1                         | 577.1             |       | 90.9                                  | 20.6           | 1.000015                  |
| 73000.0                           | 41.3                  | -53.4          |                        |                      | 65.5                         | 577.4             |       | 88.5                                  | 21.9           | 1.000015                  |
| 73500.0                           | 40.3                  | -53.1          |                        |                      | 63.9                         | 577.8             |       | 86.6                                  | 22.1           | 1.000014                  |
| 74000.0                           | 39.4                  | -52.8          |                        |                      | 62.3                         | 578.2             |       | 84.8                                  | 22.4           | 1.000014                  |
| 74500.0                           | 38.5                  | -52.5          |                        |                      | 60.8                         | 578.6             |       | 86.0                                  | 22.5           | 1.000014                  |
| 75000.0                           | 37.6                  | -52.2          |                        |                      | 59.3                         | 579.0             |       | 88.1                                  | 22.7           | 1.000013                  |
| 75500.0                           | 36.7                  | -51.9          |                        |                      | 57.8                         | 579.4             |       | 90.2                                  | 22.9           | 1.000013                  |
| 76000.0                           | 35.9                  | -51.6          |                        |                      | 56.4                         | 579.8             |       | 94.9                                  | 23.8           | 1.000013                  |
| 76500.0                           | 35.0                  | -51.3          |                        |                      | 55.0                         | 580.2             |       | 99.2                                  | 24.8           | 1.000012                  |
| 77000.0                           | 34.2                  | -51.0          |                        |                      | 53.7                         | 580.6             |       | 102.6                                 | 25.6           | 1.000012                  |
| 77500.0                           | 33.4                  | -50.7          |                        |                      | 52.4                         | 581.0             |       | 104.6                                 | 26.0           | 1.000012                  |
| 78000.0                           | 32.7                  | -50.4          |                        |                      | 51.1                         | 581.4             |       | 106.6                                 | 26.4           | 1.000011                  |
| 78500.0                           | 31.9                  | -50.1          |                        |                      | 49.8                         | 581.8             |       | 107.1                                 | 25.3           | 1.000011                  |
| 79000.0                           | 31.2                  | -49.8          |                        |                      | 48.6                         | 582.2             |       | 106.4                                 | 23.2           | 1.000011                  |

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 157

UPPER AIR DATA  
2110040157  
STATION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |  |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 79500.0                           | 30.4                  | -49.5                                    |                      | 47.4                         | 582.6                      | 105.4                    | 21.0           | 1.000011                  |
| 80000.0                           | 29.7                  | -49.0                                    |                      | 46.2                         | 583.3                      | 102.6                    | 20.2           | 1.000010                  |
| 80500.0                           | 29.1                  | -48.2                                    |                      | 45.0                         | 584.3                      | 99.1                     | 19.9           | 1.000010                  |
| 81000.0                           | 28.4                  | -47.4                                    |                      | 43.9                         | 585.3                      | 95.5                     | 19.8           | 1.000010                  |
| 81500.0                           | 27.8                  | -47.3                                    |                      | 42.8                         | 585.5                      | 91.9                     | 20.6           | 1.000010                  |
| 82000.0                           | 27.1                  | -47.2                                    |                      | 41.9                         | 585.6                      | 88.6                     | 21.8           | 1.000009                  |
| 82500.0                           | 26.5                  | -47.2                                    |                      | 40.9                         | 585.6                      | 85.7                     | 23.1           | 1.000009                  |
| 83000.0                           | 25.9                  | -47.1                                    |                      | 40.0                         | 585.7                      | 84.6                     | 23.5           | 1.000009                  |
| 83500.0                           | 25.3                  | -47.1                                    |                      | 39.1                         | 585.8                      | 84.0                     | 23.7           | 1.000009                  |
| 84000.0                           | 24.8                  | -47.0                                    |                      | 38.2                         | 585.8                      | 83.3                     | 23.8           | 1.000008                  |
| 84500.0                           | 24.2                  | -47.0                                    |                      | 37.3                         | 585.9                      | 82.6                     | 24.2           | 1.000008                  |
| 85000.0                           | 23.7                  | -46.9                                    |                      | 36.5                         | 585.9                      | 81.9                     | 24.5           | 1.000008                  |
| 85500.0                           | 23.1                  | -46.9                                    |                      | 35.6                         | 586.0                      | 81.3                     | 24.9           | 1.000008                  |
| 86000.0                           | 22.6                  | -46.8                                    |                      | 34.8                         | 586.1                      | 81.2                     | 26.2           | 1.000008                  |
| 86500.0                           | 22.1                  | -46.8                                    |                      | 34.0                         | 586.1                      | 81.3                     | 27.6           | 1.000008                  |
| 87000.0                           | 21.6                  | -46.8                                    |                      | 33.2                         | 586.2                      | 81.4                     | 29.1           | 1.000007                  |
| 87500.0                           | 21.1                  | -46.7                                    |                      | 32.5                         | 586.2                      | 82.5                     | 31.3           | 1.000007                  |
| 88000.0                           | 20.6                  | -46.7                                    |                      | 31.8                         | 586.3                      | 83.5                     | 33.6           | 1.000007                  |
| 88500.0                           | 20.2                  | -46.6                                    |                      | 31.0                         | 586.4                      | 84.5                     | 35.9           | 1.000007                  |
| 89000.0                           | 19.7                  | -46.5                                    |                      | 30.3                         | 586.5                      | 84.6                     | 36.4           | 1.000007                  |
| 89500.0                           | 19.3                  | -46.3                                    |                      | 29.6                         | 586.8                      | 84.6                     | 36.7           | 1.000007                  |
| 90000.0                           | 18.9                  | -46.1                                    |                      | 28.9                         | 587.1                      | 84.6                     | 36.9           | 1.000006                  |
| 90500.0                           | 18.4                  | -45.8                                    |                      | 28.3                         | 587.4                      | 85.1                     | 37.6           | 1.000006                  |
| 91000.0                           | 18.0                  | -45.6                                    |                      | 27.6                         | 587.6                      | 85.6                     | 38.4           | 1.000006                  |
| 91500.0                           | 17.6                  | -45.4                                    |                      | 27.0                         | 587.9                      | 86.0                     | 39.2           | 1.000006                  |
| 92000.0                           | 17.2                  | -45.2                                    |                      | 26.3                         | 588.2                      | 87.1                     | 40.0           | 1.000006                  |
| 92500.0                           | 16.8                  | -45.0                                    |                      | 25.7                         | 588.4                      | 88.3                     | 40.8           | 1.000006                  |
| 93000.0                           | 16.5                  | -44.8                                    |                      | 25.1                         | 588.7                      | 89.5                     | 41.6           | 1.000006                  |
| 93500.0                           | 16.1                  | -44.6                                    |                      | 24.5                         | 589.0                      | 90.3                     | 41.8           | 1.000005                  |
| 94000.0                           | 15.7                  | -44.4                                    |                      | 24.0                         | 589.2                      | 90.3                     | 40.1           | 1.000005                  |



STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 157

UPPER AIR DATA  
2110040157  
STALLION

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

TABLE X (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 94500.0                           | 15.4                  | -44.2          |                        |                      | 23.4                         | 589.5             |       | 90.2                     | 38.5           | 1.000005                  |
| 95000.0                           | 15.1                  | -44.0          |                        |                      | 22.9                         | 589.8             |       | 90.2                     | 36.8           | 1.000005                  |
| 95500.0                           | 14.7                  | -43.8          |                        |                      | 22.4                         | 590.1             |       | 88.7                     | 36.6           | 1.000005                  |
| 96000.0                           | 14.4                  | -43.5          |                        |                      | 21.8                         | 590.3             |       | 86.9                     | 36.8           | 1.000005                  |
| 96500.0                           | 14.1                  | -43.3          |                        |                      | 21.3                         | 590.6             |       | 85.0                     | 37.1           | 1.000005                  |
| 97000.0                           | 13.8                  | -43.1          |                        |                      | 20.8                         | 590.9             |       | 83.4                     | 37.9           | 1.000005                  |
| 97500.0                           | 13.5                  | -42.9          |                        |                      | 20.4                         | 591.1             |       | 82.5                     | 40.2           | 1.000005                  |
| 98000.0                           | 13.2                  | -42.7          |                        |                      | 19.9                         | 591.4             |       | 81.7                     | 42.4           | 1.000004                  |
| 98500.0                           | 12.9                  | -42.5          |                        |                      | 19.4                         | 591.7             |       | 81.0                     | 44.7           | 1.000004                  |
| 99000.0                           | 12.6                  | -42.3          |                        |                      | 19.0                         | 591.9             |       | 81.6                     | 46.6           | 1.000004                  |
| 99500.0                           | 12.3                  | -42.1          |                        |                      | 18.5                         | 592.2             |       | 82.4                     | 48.3           | 1.000004                  |
| 100000.0                          | 12.0                  | -41.9          |                        |                      | 18.1                         | 592.5             |       | 83.2                     | 50.1           | 1.000004                  |
| 100500.0                          | 11.8                  | -41.6          |                        |                      | 17.7                         | 592.9             |       | 84.4                     | 51.3           | 1.000004                  |
| 101000.0                          | 11.5                  | -40.9          |                        |                      | 17.2                         | 593.8             |       | 86.8                     | 51.1           | 1.000004                  |
| 101500.0                          | 11.2                  | -40.2          |                        |                      | 16.8                         | 594.7             |       | 89.1                     | 50.9           | 1.000004                  |
| 102000.0                          | 11.0                  | -39.5          |                        |                      | 16.4                         | 595.6             |       | 91.5                     | 50.9           | 1.000004                  |
| 102500.0                          | 10.8                  | -38.8          |                        |                      | 16.0                         | 596.4             |       |                          |                | 1.000004                  |
| 103000.0                          | 10.5                  | -38.0          |                        |                      | 15.6                         | 597.3             |       |                          |                | 1.000003                  |
| 103500.0                          | 10.3                  | -37.3          |                        |                      | 15.2                         | 598.2             |       |                          |                | 1.000003                  |
| 104000.0                          | 10.1                  | -36.6          |                        |                      | 14.8                         | 599.1             |       |                          |                | 1.000003                  |
| 104500.0                          | 9.9                   | -36.3          |                        |                      | 14.5                         | 599.5             |       |                          |                | 1.000003                  |
| 105000.0                          | 9.6                   | -36.3          |                        |                      | 14.2                         | 599.6             |       |                          |                | 1.000003                  |

STATION ALTITUDE 4940.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 157

MANDATORY LEVELS  
211004J157  
STALLION  
TABLE XI

WSTM SITE COORDINATES  
403783.00 FEET E  
701403.00 FEET N

| PRESSURE GEOPOTENTIAL |         | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|---------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET    | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                 | 4986.   | 20.1           | 13.0                   | 64.                  | .1                       | 1.9            |
| 800.0                 | 6692.   | 16.8           | 8.5                    | 58.                  | 12.4                     | .6             |
| 750.0                 | 8495.   | 15.4           | 4.8                    | 49.                  | 112.8                    | 3.6            |
| 700.0                 | 10400.  | 10.6           | 2.7                    | 58.                  | 123.2                    | 5.9            |
| 650.0                 | 12414.  | 6.8            | -2.2                   | 53.                  | 151.3                    | 9.1            |
| 600.0                 | 14557.  | 2.7            | -7.5                   | 47.                  | 99.7                     | 9.9            |
| 550.0                 | 16846.  | -2.6           | -11.9                  | 49.                  | 101.4                    | 13.7           |
| 500.0                 | 19303.  | -6.5           | -19.8                  | 34.                  | 93.9                     | 15.7           |
| 450.0                 | 21983.  | -11.5          | -27.2                  | 26.                  | 57.4                     | 6.2            |
| 400.0                 | 24907.  | -18.3          | -36.2                  | 19.                  | 66.3                     | 12.2           |
| 350.0                 | 28152.  | -23.4          | -41.5                  | 17.                  | 76.7                     | 21.5           |
| 300.0                 | 31784.  | -32.7          | -49.4                  | 17.00                | 61.9                     | 24.7           |
| 250.0                 | 35908.  | -43.0          |                        |                      | 59.2                     | 20.1           |
| 200.0                 | 40718.  | -54.7          |                        |                      | 43.0                     | 6.2            |
| 175.0                 | 43481.  | -61.0          |                        |                      | 59.5                     | 9.9            |
| 150.0                 | 46578.  | -66.5          |                        |                      | 79.4                     | 15.7           |
| 125.0                 | 50192.  | -67.3          |                        |                      | 91.4                     | 15.9           |
| 100.0                 | 54585.  | -69.4          |                        |                      | 41.8                     | 8.3            |
| 80.0                  | 59011.  | -64.2          |                        |                      | 92.3                     | 17.9           |
| 70.0                  | 61712.  | -61.1          |                        |                      | 82.6                     | 11.8           |
| 60.0                  | 64881.  | -57.3          |                        |                      | 98.5                     | 20.7           |
| 50.0                  | 68682.  | -55.9          |                        |                      | 106.2                    | 15.3           |
| 40.0                  | 73371.  | -53.0          |                        |                      | 86.1                     | 22.2           |
| 30.0                  | 79507.  | -49.3          |                        |                      | 103.9                    | 20.3           |
| 25.0                  | 83460.  | -47.0          |                        |                      | 83.6                     | 23.8           |
| 20.0                  | 88313.  | -46.6          |                        |                      | 84.6                     | 36.3           |
| 15.0                  | 94613.  | -43.9          |                        |                      | 90.2                     | 36.7           |
| 10.0                  | 103648. | -36.4          |                        |                      |                          |                |

.. AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510

SIGNIFICANT LEVEL DATA  
21100200510  
WHITE SANDS

WSTM SITE COORDINATES  
488580.00 FEET E  
185345.00 FEET N

TABLE XII

| PRESSURE GEOMETRIC |                      | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--------------------|----------------------|----------------|------------------------|----------------------|
| MIL. IBARS         | ALTITUDE<br>MSL FEET | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 881.3              | 3989.0               | 23.9           | 16.4                   | 63.0                 |
| 850.0              | 5024.0               | 20.5           | 14.2                   | 67.0                 |
| 828.6              | 5747.3               | 18.6           | 15.7                   | 83.0                 |
| 756.8              | 8302.6               | 17.3           | 8.7                    | 57.0                 |
| 700.0              | 10472.6              | 11.7           | 4.2                    | 60.0                 |
| 606.2              | 14375.2              | 3.7            | -3.3                   | 60.0                 |
| 546.6              | 17113.2              | -1.9           | -5.9                   | 74.0                 |
| 539.6              | 17499.0              | -2.3           | -7.2                   | 69.0                 |
| 500.0              | 19430.2              | -5.8           | -11.7                  | 63.0                 |
| 468.8              | 21083.6              | -8.6           | -12.5                  | 73.0                 |
| 454.2              | 21888.8              | -10.1          | -17.0                  | 57.0                 |
| 424.8              | 23576.0              | -13.3          | -23.2                  | 43.0                 |
| 411.0              | 24401.0              | -14.9          | -23.9                  | 46.0                 |
| 400.0              | 25074.7              | -16.4          | -21.8                  | 63.0                 |
| 364.0              | 27387.5              | -21.4          | -23.6                  | 82.0                 |
| 345.8              | 28627.0              | -23.8          | -29.5                  | 59.0                 |
| 332.4              | 29573.6              | -25.8          | -37.2                  | 33.0                 |
| 320.8              | 30417.8              | -27.5          | -45.5                  | 16.0                 |
| 300.0              | 31993.6              | -31.2          | -46.6                  | 20.0                 |
| 275.4              | 33968.0              | -36.5          | -46.1                  | 36.0                 |
| 250.0              | 36150.1              | -42.2          | -50.6                  | 39.0                 |
| 200.0              | 40995.5              | -53.9          |                        |                      |
| 165.0              | 44975.9              | -63.6          |                        |                      |
| 150.0              | 46891.2              | -66.4          |                        |                      |
| 142.8              | 47877.5              | -64.6          |                        |                      |
| 129.4              | 49845.3              | -68.1          |                        |                      |
| 113.4              | 52456.8              | -68.5          |                        |                      |
| 100.0              | 54950.4              | -67.3          |                        |                      |
| 70.0               | 62179.9              | -59.5          |                        |                      |
| 50.0               | 69191.8              | -55.8          |                        |                      |

STATION ALTITUDE 3989.00 FEET MSL  
 29 JULY 76 0950 HRS MDT  
 ASCENSION NO. 510

SIGNIFICANT LEVEL DATA

2110020510  
 WHITE SANDS

WSTM SITE COORDINATES  
 488580.00 FEET E  
 185045.00 FEET N

TABLE XII (CONT)

| PRESSURE GEOMETRIC |                      | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--------------------|----------------------|----------------|------------------------|----------------------|
| MILLIBARS          | ALTITUDE<br>MSL FEET | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 30.0               | 80083.8              | -49.8          |                        |                      |
| 23.0               | 85916.0              | -43.3          |                        |                      |
| 20.0               | 89011.2              | -46.0          |                        |                      |
| 13.5               | 97741.1              | -42.1          |                        |                      |
| 10.0               | 104528.8             | -38.0          |                        |                      |
| 8.0                | 109647.2             | -35.8          |                        |                      |



UPPER AIR DATA  
2110020510  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 75  
ASCENSION NO. 510

0950 HRS MDT

WSTM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

TABLE XIII

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                                       |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3989.0                            | 881.3                 | 23.9                          | 16.4                                  | 63.0                 | 1025.2                       | 674.2                      | .0                       | .0             | 1.000333                  |
| 4000.0                            | 881.0                 | 23.9                          | 16.4                                  | 63.0                 | 1025.0                       | 674.1                      | 109.8                    | .0             | 1.000309                  |
| 4500.0                            | 865.7                 | 22.2                          | 15.3                                  | 65.0                 | 1013.2                       | 672.1                      | 109.8                    | 1.1            | 1.000332                  |
| 5000.0                            | 850.7                 | 20.6                          | 14.2                                  | 66.9                 | 1001.7                       | 670.1                      | 109.8                    | 2.1            | 1.000295                  |
| 5500.0                            | 835.9                 | 19.2                          | 15.2                                  | 77.5                 | 988.0                        | 668.8                      | 109.8                    | 3.2            | 1.000297                  |
| 6000.0                            | 821.2                 | 18.5                          | 15.0                                  | 80.4                 | 973.3                        | 667.9                      | 109.8                    | 4.2            | 1.000293                  |
| 6500.0                            | 806.8                 | 18.2                          | 13.8                                  | 75.3                 | 957.5                        | 667.5                      | 117.4                    | 4.9            | 1.000284                  |
| 7000.0                            | 792.6                 | 18.0                          | 12.5                                  | 70.3                 | 941.9                        | 667.0                      | 133.4                    | 5.4            | 1.000275                  |
| 7500.0                            | 778.7                 | 17.7                          | 11.1                                  | 65.2                 | 926.6                        | 666.6                      | 150.2                    | 5.4            | 1.000255                  |
| 8000.0                            | 765.0                 | 17.5                          | 9.6                                   | 60.1                 | 911.6                        | 666.1                      | 168.9                    | 5.6            | 1.000257                  |
| 8500.0                            | 751.4                 | 16.8                          | 8.3                                   | 57.3                 | 897.9                        | 665.2                      | 183.1                    | 6.2            | 1.000250                  |
| 9000.0                            | 738.1                 | 15.5                          | 7.3                                   | 58.0                 | 886.1                        | 663.6                      | 192.3                    | 7.1            | 1.000244                  |
| 9500.0                            | 724.9                 | 14.2                          | 6.2                                   | 58.7                 | 874.4                        | 662.0                      | 196.8                    | 8.1            | 1.000239                  |
| 10000.0                           | 712.0                 | 12.9                          | 5.2                                   | 59.3                 | 863.0                        | 660.5                      | 196.4                    | 9.0            | 1.000233                  |
| 10500.0                           | 699.3                 | 11.6                          | 4.2                                   | 60.0                 | 851.6                        | 658.9                      | 194.1                    | 9.7            | 1.000228                  |
| 11000.0                           | 686.5                 | 10.6                          | 3.2                                   | 60.0                 | 839.2                        | 657.7                      | 189.9                    | 10.0           | 1.000223                  |
| 11500.0                           | 674.0                 | 9.6                           | 2.2                                   | 60.0                 | 827.1                        | 656.4                      | 188.7                    | 11.3           | 1.000218                  |
| 12000.0                           | 661.7                 | 8.6                           | 1.3                                   | 60.0                 | 815.1                        | 655.1                      | 189.3                    | 12.2           | 1.000214                  |
| 12500.0                           | 649.6                 | 7.5                           | .3                                    | 60.0                 | 803.3                        | 653.9                      | 190.3                    | 13.5           | 1.000209                  |
| 13000.0                           | 637.7                 | 6.5                           | -.7                                   | 60.0                 | 791.6                        | 652.6                      | 191.5                    | 14.6           | 1.000205                  |
| 13500.0                           | 626.1                 | 5.5                           | -1.6                                  | 60.0                 | 780.2                        | 651.4                      | 193.0                    | 14.1           | 1.000200                  |
| 14000.0                           | 614.6                 | 4.5                           | -2.6                                  | 60.0                 | 768.9                        | 650.1                      | 195.2                    | 12.5           | 1.000196                  |
| 14500.0                           | 603.3                 | 3.4                           | -3.4                                  | 50.6                 | 757.6                        | 648.9                      | 196.7                    | 10.9           | 1.000192                  |
| 15000.0                           | 592.1                 | 2.4                           | -3.8                                  | 63.2                 | 746.2                        | 647.7                      | 197.5                    | 9.2            | 1.000189                  |
| 15500.0                           | 581.0                 | 1.4                           | -4.3                                  | 65.8                 | 735.0                        | 646.4                      | 199.6                    | 8.3            | 1.000185                  |
| 16000.0                           | 570.1                 | .4                            | -4.8                                  | 68.3                 | 724.0                        | 645.2                      | 202.6                    | 8.0            | 1.000183                  |
| 16500.0                           | 559.4                 | -.6                           | -5.3                                  | 70.9                 | 713.2                        | 644.0                      | 204.7                    | 7.5            | 1.000180                  |
| 17000.0                           | 548.9                 | -1.7                          | -5.8                                  | 73.4                 | 702.5                        | 642.8                      | 206.6                    | 6.8            | 1.000177                  |
| 17500.0                           | 538.6                 | -2.3                          | -7.2                                  | 69.0                 | 691.0                        | 641.9                      | 206.6                    | 6.1            | 1.000172                  |
| 18000.0                           | 528.3                 | -3.2                          | -8.4                                  | 67.4                 | 680.2                        | 640.8                      | 205.2                    | 5.5            | 1.000168                  |

WSIM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

UPPER AIR DATA  
2110020510  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510  
0950 HRS MDT

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CM <sup>3</sup> | SPEED OF<br>SOUND<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|-------------------------------|----------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                                       |                      |                               |                            |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 19500.0                           | 518.2                 | -4.1                          | -9.5                                  | 55.9                 | 559.6                         | 639.7                      |                            | 200.1                    | 5.1            | 1.000155                  |
| 19000.0                           | 508.4                 | -5.0                          | -10.7                                 | 54.3                 | 659.1                         | 638.6                      |                            | 191.1                    | 4.8            | 1.000151                  |
| 19500.0                           | 498.6                 | -5.9                          | -11.7                                 | 63.4                 | 648.8                         | 637.5                      |                            | 176.7                    | 4.1            | 1.000158                  |
| 20000.0                           | 489.0                 | -6.8                          | -11.9                                 | 66.4                 | 638.3                         | 636.4                      |                            | 145.1                    | 3.2            | 1.000155                  |
| 20500.0                           | 479.6                 | -7.6                          | -12.2                                 | 69.5                 | 628.0                         | 635.4                      |                            | 108.2                    | 3.6            | 1.000153                  |
| 21000.0                           | 470.3                 | -8.5                          | -12.5                                 | 72.5                 | 617.8                         | 634.4                      |                            | 96.2                     | 5.1            | 1.000150                  |
| 21500.0                           | 461.2                 | -9.4                          | -14.8                                 | 64.7                 | 608.1                         | 633.2                      |                            | 80.7                     | 6.7            | 1.000146                  |
| 22000.0                           | 452.2                 | -10.3                         | -17.4                                 | 56.1                 | 598.6                         | 632.0                      |                            | 84.2                     | 7.9            | 1.000142                  |
| 22500.0                           | 443.3                 | -11.3                         | -19.1                                 | 51.9                 | 589.0                         | 630.8                      |                            | 86.5                     | 8.6            | 1.000139                  |
| 23000.0                           | 434.6                 | -12.2                         | -21.0                                 | 47.8                 | 579.6                         | 629.6                      |                            | 88.0                     | 8.6            | 1.000135                  |
| 23500.0                           | 426.1                 | -13.2                         | -22.9                                 | 43.6                 | 570.4                         | 628.4                      |                            | 82.1                     | 8.3            | 1.000132                  |
| 24000.0                           | 417.7                 | -14.1                         | -23.5                                 | 44.5                 | 561.2                         | 627.3                      |                            | 61.4                     | 8.3            | 1.000130                  |
| 24500.0                           | 409.4                 | -15.1                         | -23.5                                 | 48.5                 | 552.2                         | 626.1                      |                            | 43.2                     | 8.7            | 1.000128                  |
| 25000.0                           | 401.2                 | -16.2                         | -22.0                                 | 61.1                 | 543.5                         | 624.7                      |                            | 31.4                     | 9.6            | 1.000127                  |
| 25500.0                           | 393.1                 | -17.3                         | -22.0                                 | 66.5                 | 534.8                         | 623.4                      |                            | 23.1                     | 10.5           | 1.000125                  |
| 26000.0                           | 385.2                 | -18.4                         | -22.4                                 | 70.6                 | 526.2                         | 622.1                      |                            | 22.8                     | 9.8            | 1.000123                  |
| 26500.0                           | 377.4                 | -19.5                         | -22.8                                 | 74.7                 | 517.8                         | 620.8                      |                            | 21.9                     | 9.1            | 1.000121                  |
| 27000.0                           | 369.8                 | -20.6                         | -23.3                                 | 78.8                 | 509.5                         | 619.5                      |                            | 12.7                     | 8.8            | 1.000119                  |
| 27500.0                           | 362.3                 | -21.6                         | -24.1                                 | 79.9                 | 501.3                         | 618.1                      |                            | 3.0                      | 8.8            | 1.000117                  |
| 28000.0                           | 354.9                 | -22.6                         | -26.4                                 | 70.6                 | 493.0                         | 616.9                      |                            | 1.5                      | 8.5            | 1.000114                  |
| 28500.0                           | 347.6                 | -23.6                         | -28.9                                 | 61.4                 | 484.9                         | 615.7                      |                            | .0                       | 8.2            | 1.000111                  |
| 29000.0                           | 340.5                 | -24.6                         | -32.2                                 | 48.8                 | 476.9                         | 614.3                      |                            | 7.9                      | 7.7            | 1.000109                  |
| 29500.0                           | 333.4                 | -25.6                         | -36.5                                 | 35.0                 | 469.2                         | 613.0                      |                            | 17.9                     | 7.3            | 1.000106                  |
| 30000.0                           | 326.5                 | -26.7                         | -40.9                                 | 24.4                 | 461.3                         | 611.7                      |                            | 27.7                     | 6.6            | 1.000104                  |
| 30500.0                           | 319.7                 | -27.7                         | -45.5                                 | 16.2                 | 453.7                         | 610.4                      |                            | 39.4                     | 6.1            | 1.000102                  |
| 31000.0                           | 313.0                 | -28.9                         | -45.9                                 | 17.5                 | 446.2                         | 608.9                      |                            | 54.9                     | 6.3            | 1.000100                  |
| 31500.0                           | 306.4                 | -30.0                         | -46.2                                 | 18.7                 | 439.0                         | 607.5                      |                            | 68.8                     | 7.1            | 1.000098                  |
| 32000.0                           | 299.9                 | -31.2                         | -46.6                                 | 20.1                 | 431.8                         | 606.0                      |                            | 76.2                     | 8.0            | 1.000097                  |
| 32500.0                           | 293.5                 | -32.6                         | -46.1                                 | 24.1                 | 424.9                         | 604.3                      |                            | 79.8                     | 8.9            | 1.000095                  |
| 33000.0                           | 287.2                 | -33.9                         | -45.9                                 | 28.2                 | 418.1                         | 602.6                      |                            | 83.9                     | 9.6            | 1.000094                  |

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 75 0950 HRS MDT  
ASCENSION NO. 510

UPPER AIR DATA  
2110020510  
WHITE SANDS

WSTM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 33500.0                           | 281.0                 | -35.2          | -45.9                  | 32.2                 | 411.5                        | 600.9             |       | 89.7                     | 10.2           | 1.000092                  |
| 34000.0                           | 275.0                 | -36.6          | -46.1                  | 36.0                 | 404.9                        | 599.2             |       | 93.2                     | 10.7           | 1.000091                  |
| 34500.0                           | 269.0                 | -37.9          | -47.2                  | 36.7                 | 398.2                        | 597.6             |       | 98.3                     | 10.9           | 1.000089                  |
| 35000.0                           | 263.1                 | -39.2          | -48.2                  | 37.4                 | 391.7                        | 595.9             |       | 102.1                    | 11.3           | 1.000088                  |
| 35500.0                           | 257.3                 | -40.5          | -49.2                  | 38.1                 | 385.3                        | 594.2             |       | 96.8                     | 12.8           | 1.000085                  |
| 36000.0                           | 251.7                 | -41.8          | -50.3                  | 38.8                 | 378.9                        | 592.6             |       | 92.6                     | 14.5           | 1.000085                  |
| 36500.0                           | 246.0                 | -43.0          | -52.0                  | 36.2**               | 372.4                        | 591.0             |       | 92.5                     | 15.3           | 1.000083                  |
| 37000.0                           | 240.4                 | -44.3          | -54.0                  | 32.2**               | 365.9                        | 589.4             |       | 92.9                     | 15.9           | 1.000082                  |
| 37500.0                           | 234.9                 | -45.5          | -56.2                  | 28.1**               | 359.4                        | 587.9             |       | 98.4                     | 15.0           | 1.000090                  |
| 38000.0                           | 229.6                 | -46.7          | -58.5                  | 24.1**               | 353.1                        | 586.3             |       | 107.2                    | 13.7           | 1.000079                  |
| 38500.0                           | 224.4                 | -47.9          | -61.0                  | 20.1**               | 346.9                        | 584.7             |       | 117.2                    | 13.4           | 1.000077                  |
| 39000.0                           | 219.3                 | -49.1          | -63.7                  | 16.1**               | 340.9                        | 583.2             |       | 126.9                    | 14.0           | 1.000075                  |
| 39500.0                           | 214.3                 | -50.3          | -66.8                  | 12.0**               | 334.9                        | 581.6             |       | 137.7                    | 15.2           | 1.000075                  |
| 40000.0                           | 209.4                 | -51.5          | -70.6                  | 8.0**                | 329.1                        | 580.0             |       | 148.4                    | 17.4           | 1.000073                  |
| 40500.0                           | 204.6                 | -52.7          | -76.1                  | 4.0**                | 323.3                        | 578.4             |       | 154.4                    | 19.6           | 1.000072                  |
| 41000.0                           | 200.0                 | -53.9          |                        |                      | 317.7                        | 576.8             |       | 156.3                    | 21.3           | 1.000071                  |
| 41500.0                           | 195.2                 | -55.1          |                        |                      | 311.9                        | 575.2             |       | 157.7                    | 22.6           | 1.000069                  |
| 42000.0                           | 190.5                 | -56.3          |                        |                      | 306.1                        | 573.6             |       | 157.7                    | 20.7           | 1.000058                  |
| 42500.0                           | 186.0                 | -57.6          |                        |                      | 300.5                        | 572.0             |       | 157.8                    | 18.9           | 1.000067                  |
| 43000.0                           | 181.5                 | -58.8          |                        |                      | 295.0                        | 570.4             |       | 161.1                    | 15.1           | 1.000055                  |
| 43500.0                           | 177.2                 | -60.0          |                        |                      | 289.6                        | 568.8             |       | 167.6                    | 11.1           | 1.000065                  |
| 44000.0                           | 173.0                 | -61.2          |                        |                      | 284.3                        | 567.1             |       | 172.0                    | 7.5            | 1.000053                  |
| 44500.0                           | 168.8                 | -62.4          |                        |                      | 279.1                        | 565.5             |       | 130.6                    | 5.9            | 1.000062                  |
| 45000.0                           | 164.8                 | -63.6          |                        |                      | 274.0                        | 563.9             |       | 92.2                     | 7.9            | 1.000051                  |
| 45500.0                           | 160.8                 | -64.4          |                        |                      | 268.2                        | 562.9             |       | 84.2                     | 12.5           | 1.000060                  |
| 46000.0                           | 156.8                 | -65.1          |                        |                      | 262.5                        | 561.9             |       | 85.5                     | 17.7           | 1.000058                  |
| 46500.0                           | 152.9                 | -65.8          |                        |                      | 257.0                        | 560.9             |       | 86.4                     | 21.3           | 1.000057                  |
| 47000.0                           | 149.2                 | -66.2          |                        |                      | 251.1                        | 560.4             |       | 88.1                     | 20.6           | 1.000055                  |
| 47500.0                           | 145.5                 | -65.3          |                        |                      | 243.9                        | 561.7             |       | 89.9                     | 19.9           | 1.000054                  |
| 48000.0                           | 141.9                 | -64.8          |                        |                      | 237.3                        | 562.3             |       | 92.1                     | 18.7           | 1.000053                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA  
2110020510  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510

WSTM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 48500.0                           | 138.4                 | -65.7                         |                      | 232.4                        | 561.1                      | 94.6                     | 17.4           | 1.000052                  |
| 49000.0                           | 135.0                 | -66.6                         |                      | 227.7                        | 559.9                      | 96.3                     | 16.1           | 1.000051                  |
| 49500.0                           | 131.7                 | -67.5                         |                      | 223.0                        | 558.7                      | 96.7                     | 14.7           | 1.000050                  |
| 50000.0                           | 128.4                 | -68.1                         |                      | 218.2                        | 557.8                      | 96.9                     | 13.4           | 1.000049                  |
| 50500.0                           | 125.2                 | -68.2                         |                      | 212.8                        | 557.7                      | 91.8                     | 14.3           | 1.000047                  |
| 51000.0                           | 122.1                 | -68.3                         |                      | 207.6                        | 557.6                      | 87.3                     | 15.2           | 1.000046                  |
| 51500.0                           | 119.0                 | -68.4                         |                      | 202.5                        | 557.5                      | 89.2                     | 15.5           | 1.000045                  |
| 52000.0                           | 116.0                 | -68.4                         |                      | 197.5                        | 557.4                      | 93.7                     | 15.7           | 1.000044                  |
| 52500.0                           | 113.2                 | -68.5                         |                      | 192.6                        | 557.3                      | 93.5                     | 15.1           | 1.000043                  |
| 53000.0                           | 110.3                 | -68.2                         |                      | 187.6                        | 557.7                      | 81.9                     | 13.3           | 1.000042                  |
| 53500.0                           | 107.6                 | -68.0                         |                      | 182.7                        | 558.0                      | 67.5                     | 12.2           | 1.000041                  |
| 54000.0                           | 104.9                 | -67.8                         |                      | 177.9                        | 558.3                      | 54.0                     | 14.2           | 1.000040                  |
| 54500.0                           | 102.3                 | -67.5                         |                      | 173.3                        | 558.7                      | 44.4                     | 16.9           | 1.000039                  |
| 55000.0                           | 99.8                  | -67.2                         |                      | 168.8                        | 559.0                      | 44.2                     | 18.8           | 1.000038                  |
| 55500.0                           | 97.3                  | -66.7                         |                      | 164.2                        | 559.8                      | 48.9                     | 20.2           | 1.000037                  |
| 56000.0                           | 95.0                  | -66.2                         |                      | 159.8                        | 560.5                      | 53.0                     | 21.6           | 1.000036                  |
| 56500.0                           | 92.6                  | -65.6                         |                      | 155.5                        | 561.2                      | 58.4                     | 21.1           | 1.000035                  |
| 57000.0                           | 90.4                  | -65.1                         |                      | 151.3                        | 561.9                      | 64.5                     | 20.4           | 1.000034                  |
| 57500.0                           | 88.2                  | -64.5                         |                      | 147.3                        | 562.7                      | 70.9                     | 20.0           | 1.000033                  |
| 58000.0                           | 86.0                  | -64.0                         |                      | 143.3                        | 563.4                      | 84.1                     | 17.9           | 1.000032                  |
| 58500.0                           | 83.9                  | -63.5                         |                      | 139.5                        | 564.1                      | 100.2                    | 16.8           | 1.000031                  |
| 59000.0                           | 81.9                  | -62.9                         |                      | 135.7                        | 564.8                      | 116.1                    | 17.1           | 1.000030                  |
| 59500.0                           | 79.9                  | -62.4                         |                      | 132.1                        | 565.6                      | 117.1                    | 17.1           | 1.000029                  |
| 60000.0                           | 77.9                  | -61.9                         |                      | 128.5                        | 566.3                      | 118.2                    | 17.1           | 1.000028                  |
| 60500.0                           | 76.0                  | -61.3                         |                      | 125.1                        | 567.0                      | 117.0                    | 17.1           | 1.000027                  |
| 61000.0                           | 74.2                  | -60.8                         |                      | 121.7                        | 567.7                      | 109.1                    | 17.2           | 1.000026                  |
| 61500.0                           | 72.4                  | -60.2                         |                      | 118.4                        | 568.5                      | 101.5                    | 17.7           | 1.000025                  |
| 62000.0                           | 70.6                  | -59.7                         |                      | 115.3                        | 569.2                      | 97.7                     | 17.9           | 1.000024                  |
| 62500.0                           | 68.9                  | -59.3                         |                      | 112.3                        | 569.7                      | 98.5                     | 17.6           | 1.000023                  |
| 63000.0                           | 67.3                  | -59.1                         |                      | 109.5                        | 570.0                      | 99.4                     | 17.3           | 1.000022                  |



WSTM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

UPPER AIR DATA  
2110020510  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510  
0950 HRS MDT

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | TEMPERATURE<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|---------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |                               |                                       |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 63500.0                           | 65.7                  | -58.8                         |                                       |                      | 105.8                        | 570.4                      | 99.7                     | 16.6           | 1.000024                  |
| 64000.0                           | 64.1                  | -58.5                         |                                       |                      | 104.1                        | 570.7                      | 99.7                     | 15.8           | 1.000023                  |
| 64500.0                           | 62.6                  | -58.3                         |                                       |                      | 101.5                        | 571.1                      | 99.8                     | 14.9           | 1.000023                  |
| 65000.0                           | 61.1                  | -58.0                         |                                       |                      | 99.0                         | 571.4                      | 96.3                     | 15.3           | 1.000022                  |
| 65500.0                           | 59.7                  | -57.7                         |                                       |                      | 96.5                         | 571.8                      | 92.6                     | 15.9           | 1.000022                  |
| 66000.0                           | 58.3                  | -57.5                         |                                       |                      | 94.1                         | 572.1                      | 89.5                     | 16.7           | 1.000021                  |
| 66500.0                           | 56.9                  | -57.2                         |                                       |                      | 91.8                         | 572.5                      | 88.6                     | 17.6           | 1.000020                  |
| 67000.0                           | 55.5                  | -57.0                         |                                       |                      | 89.5                         | 572.8                      | 87.8                     | 18.5           | 1.000020                  |
| 67500.0                           | 54.2                  | -56.7                         |                                       |                      | 87.3                         | 573.2                      | 88.4                     | 19.2           | 1.000019                  |
| 68000.0                           | 52.9                  | -56.4                         |                                       |                      | 85.1                         | 573.5                      | 91.1                     | 19.4           | 1.000019                  |
| 68500.0                           | 51.7                  | -56.2                         |                                       |                      | 83.0                         | 573.9                      | 93.7                     | 19.6           | 1.000018                  |
| 69000.0                           | 50.5                  | -55.9                         |                                       |                      | 80.9                         | 574.2                      | 94.7                     | 19.9           | 1.000018                  |
| 69500.0                           | 49.3                  | -55.6                         |                                       |                      | 78.9                         | 574.6                      | 94.1                     | 20.3           | 1.000018                  |
| 70000.0                           | 48.1                  | -55.4                         |                                       |                      | 77.0                         | 574.9                      | 93.6                     | 20.6           | 1.000017                  |
| 70500.0                           | 47.0                  | -55.1                         |                                       |                      | 75.1                         | 575.3                      | 93.3                     | 21.0           | 1.000017                  |
| 71000.0                           | 45.9                  | -54.8                         |                                       |                      | 73.3                         | 575.7                      | 93.2                     | 21.5           | 1.000015                  |
| 71500.0                           | 44.9                  | -54.5                         |                                       |                      | 71.5                         | 576.0                      | 93.1                     | 22.0           | 1.000016                  |
| 72000.0                           | 43.8                  | -54.3                         |                                       |                      | 69.8                         | 576.4                      | 93.4                     | 22.4           | 1.000015                  |
| 72500.0                           | 42.8                  | -54.0                         |                                       |                      | 68.1                         | 576.8                      | 94.1                     | 22.7           | 1.000015                  |
| 73000.0                           | 41.8                  | -53.7                         |                                       |                      | 66.4                         | 577.1                      | 94.7                     | 23.1           | 1.000015                  |
| 73500.0                           | 40.9                  | -53.4                         |                                       |                      | 64.8                         | 577.5                      | 94.9                     | 23.4           | 1.000014                  |
| 74000.0                           | 39.9                  | -53.2                         |                                       |                      | 63.2                         | 577.8                      | 94.8                     | 23.8           | 1.000014                  |
| 74500.0                           | 39.0                  | -52.9                         |                                       |                      | 61.6                         | 578.2                      | 94.7                     | 24.2           | 1.000014                  |
| 75000.0                           | 38.1                  | -52.6                         |                                       |                      | 60.1                         | 578.6                      | 94.8                     | 24.6           | 1.000013                  |
| 75500.0                           | 37.2                  | -52.3                         |                                       |                      | 58.7                         | 578.9                      | 95.0                     | 24.8           | 1.000013                  |
| 76000.0                           | 36.3                  | -52.0                         |                                       |                      | 57.2                         | 579.3                      | 95.2                     | 25.1           | 1.000013                  |
| 76500.0                           | 35.5                  | -51.8                         |                                       |                      | 55.8                         | 579.6                      | 95.5                     | 25.2           | 1.000012                  |
| 77000.0                           | 34.7                  | -51.5                         |                                       |                      | 54.5                         | 580.0                      | 96.1                     | 25.3           | 1.000012                  |
| 77500.0                           | 33.9                  | -51.2                         |                                       |                      | 53.2                         | 580.4                      | 96.7                     | 25.3           | 1.000012                  |
| 78000.0                           | 33.1                  | -50.9                         |                                       |                      | 51.9                         | 580.7                      | 97.3                     | 25.4           | 1.000012                  |

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510

UPPER AIR DATA  
2110020510  
WHITE SANDS

WSYM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

0950 HRS MDT

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 78500.0                           | 32.3                  | -50.7          |                        |                      | 50.6                         | 581.1             |       | 97.5                     | 25.6           | 1.000011                  |
| 79000.0                           | 31.6                  | -50.4          |                        |                      | 49.4                         | 581.4             |       | 97.7                     | 25.8           | 1.000011                  |
| 79500.0                           | 30.8                  | -50.1          |                        |                      | 48.2                         | 581.8             |       | 98.0                     | 26.2           | 1.000011                  |
| 80000.0                           | 30.1                  | -49.8          |                        |                      | 47.0                         | 582.2             |       | 96.8                     | 26.1           | 1.000010                  |
| 80500.0                           | 29.4                  | -49.3          |                        |                      | 45.8                         | 582.8             |       | 95.5                     | 26.3           | 1.000010                  |
| 81000.0                           | 28.8                  | -48.8          |                        |                      | 44.7                         | 583.6             |       | 94.1                     | 26.4           | 1.000010                  |
| 81500.0                           | 28.1                  | -48.2          |                        |                      | 43.6                         | 584.3             |       | 94.0                     | 26.5           | 1.000010                  |
| 82000.0                           | 27.5                  | -47.7          |                        |                      | 42.5                         | 585.0             |       | 94.3                     | 26.5           | 1.000009                  |
| 82500.0                           | 26.9                  | -47.1          |                        |                      | 41.4                         | 585.7             |       | 94.6                     | 26.5           | 1.000009                  |
| 83000.0                           | 26.3                  | -46.5          |                        |                      | 40.4                         | 586.4             |       | 94.5                     | 26.7           | 1.000009                  |
| 83500.0                           | 25.7                  | -46.0          |                        |                      | 39.4                         | 587.2             |       | 94.3                     | 27.2           | 1.000009                  |
| 84000.0                           | 25.1                  | -45.4          |                        |                      | 38.4                         | 587.9             |       | 94.1                     | 27.3           | 1.000009                  |
| 84500.0                           | 24.5                  | -44.9          |                        |                      | 37.4                         | 588.6             |       | 92.0                     | 27.4           | 1.000008                  |
| 85000.0                           | 24.0                  | -44.3          |                        |                      | 36.5                         | 589.3             |       | 89.6                     | 27.6           | 1.000008                  |
| 85500.0                           | 23.4                  | -43.8          |                        |                      | 35.6                         | 590.0             |       | 87.2                     | 27.8           | 1.000008                  |
| 86000.0                           | 22.9                  | -43.4          |                        |                      | 34.7                         | 590.5             |       | 84.1                     | 28.1           | 1.000008                  |
| 86500.0                           | 22.4                  | -43.8          |                        |                      | 34.0                         | 590.0             |       | 81.0                     | 28.4           | 1.000008                  |
| 87000.0                           | 21.9                  | -44.2          |                        |                      | 33.3                         | 589.4             |       | 78.0                     | 28.8           | 1.000007                  |
| 87500.0                           | 21.4                  | -44.7          |                        |                      | 32.6                         | 588.9             |       | 76.0                     | 29.5           | 1.000007                  |
| 88000.0                           | 20.9                  | -45.1          |                        |                      | 32.0                         | 588.3             |       | 74.3                     | 30.4           | 1.000007                  |
| 88500.0                           | 20.5                  | -45.6          |                        |                      | 31.3                         | 587.7             |       | 72.6                     | 31.2           | 1.000007                  |
| 89000.0                           | 20.0                  | -46.0          |                        |                      | 30.7                         | 587.2             |       | 73.7                     | 31.3           | 1.000007                  |
| 89500.0                           | 19.6                  | -45.8          |                        |                      | 30.0                         | 587.4             |       | 75.0                     | 31.3           | 1.000007                  |
| 90000.0                           | 19.1                  | -45.6          |                        |                      | 29.3                         | 587.7             |       | 76.2                     | 31.3           | 1.000007                  |
| 90500.0                           | 18.7                  | -45.3          |                        |                      | 28.6                         | 588.0             |       | 76.6                     | 31.9           | 1.000006                  |
| 91000.0                           | 18.3                  | -45.1          |                        |                      | 27.9                         | 588.3             |       | 76.9                     | 32.6           | 1.000006                  |
| 91500.0                           | 17.9                  | -44.9          |                        |                      | 27.3                         | 588.6             |       | 77.2                     | 33.2           | 1.000006                  |
| 92000.0                           | 17.5                  | -44.7          |                        |                      | 26.7                         | 588.9             |       | 78.0                     | 33.8           | 1.000006                  |
| 92500.0                           | 17.1                  | -44.4          |                        |                      | 26.0                         | 589.2             |       | 78.7                     | 34.3           | 1.000006                  |
| 93000.0                           | 16.7                  | -44.2          |                        |                      | 25.4                         | 589.5             |       | 79.3                     | 34.9           | 1.000006                  |

STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 510

UPPER AIR DATA  
2110020510  
WHITE SANDS

WSTM SITE COORDINATES  
488580.00 FEET E  
185045.00 FEET N

0950 HRS MDT

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |              | WIND DATA |              | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|--------------|-----------|--------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | DEGREES (TN) | KNOTS     | DEGREES (TN) |                           |
| 93500.0                           | 16.3                  | -44.0          |                        |                      | 24.8                         | 589.7             | 80.3         | 35.4      |              | 1.000006                  |
| 94000.0                           | 16.0                  | -43.8          |                        |                      | 24.3                         | 590.0             | 81.5         | 35.8      |              | 1.000005                  |
| 94500.0                           | 15.6                  | -43.5          |                        |                      | 23.7                         | 590.3             | 82.7         | 36.2      |              | 1.000005                  |
| 95000.0                           | 15.3                  | -43.3          |                        |                      | 23.2                         | 590.6             | 83.9         | 36.7      |              | 1.000005                  |
| 95500.0                           | 14.9                  | -43.1          |                        |                      | 22.6                         | 590.9             | 84.3         | 37.7      |              | 1.000005                  |
| 96000.0                           | 14.6                  | -42.9          |                        |                      | 22.1                         | 591.2             | 84.5         | 39.1      |              | 1.000005                  |
| 96500.0                           | 14.3                  | -42.7          |                        |                      | 21.6                         | 591.5             | 84.6         | 40.4      |              | 1.000005                  |
| 97000.0                           | 14.0                  | -42.4          |                        |                      | 21.1                         | 591.7             | 84.8         | 41.8      |              | 1.000005                  |
| 97500.0                           | 13.6                  | -42.2          |                        |                      | 20.6                         | 592.0             | 86.4         | 41.8      |              | 1.000005                  |
| 98000.0                           | 13.3                  | -41.9          |                        |                      | 20.1                         | 592.4             | 88.1         | 41.8      |              | 1.000004                  |
| 98500.0                           | 13.1                  | -41.6          |                        |                      | 19.6                         | 592.8             | 89.9         | 41.8      |              | 1.000004                  |
| 99000.0                           | 12.8                  | -41.3          |                        |                      | 19.2                         | 593.1             | 91.7         | 42.2      |              | 1.000004                  |
| 99500.0                           | 12.5                  | -41.0          |                        |                      | 18.7                         | 593.5             | 93.9         | 44.3      |              | 1.000004                  |
| 100000.0                          | 12.2                  | -40.7          |                        |                      | 18.3                         | 593.9             | 96.0         | 46.5      |              | 1.000004                  |
| 100500.0                          | 11.9                  | -40.4          |                        |                      | 17.9                         | 594.3             | 97.9         | 48.7      |              | 1.000004                  |
| 101000.0                          | 11.7                  | -40.1          |                        |                      | 17.5                         | 594.7             | 99.2         | 50.1      |              | 1.000004                  |
| 101500.0                          | 11.4                  | -39.8          |                        |                      | 17.1                         | 595.1             | 99.8         | 50.1      |              | 1.000004                  |
| 102000.0                          | 11.2                  | -39.5          |                        |                      | 16.7                         | 595.5             | 100.5        | 50.2      |              | 1.000004                  |
| 102500.0                          | 10.9                  | -39.2          |                        |                      | 16.3                         | 595.8             | 101.1        | 50.2      |              | 1.000004                  |
| 103000.0                          | 10.7                  | -38.9          |                        |                      | 15.9                         | 596.2             | 101.3        | 48.6      |              | 1.000004                  |
| 103500.0                          | 10.5                  | -38.6          |                        |                      | 15.5                         | 596.6             | 101.1        | 45.6      |              | 1.000003                  |
| 104000.0                          | 10.2                  | -38.3          |                        |                      | 15.2                         | 597.0             | 100.9        | 42.6      |              | 1.000003                  |
| 104500.0                          | 10.0                  | -38.0          |                        |                      | 14.8                         | 597.4             | 100.6        | 39.6      |              | 1.000003                  |
| 105000.0                          | 9.8                   | -37.8          |                        |                      | 14.5                         | 597.7             | 99.8         | 41.1      |              | 1.000003                  |
| 105500.0                          | 9.6                   | -37.6          |                        |                      | 14.2                         | 597.9             | 99.0         | 44.1      |              | 1.000003                  |
| 106000.0                          | 9.4                   | -37.4          |                        |                      | 13.9                         | 598.2             | 98.2         | 47.2      |              | 1.000003                  |
| 106500.0                          | 9.2                   | -37.2          |                        |                      | 13.5                         | 598.5             | 97.6         | 50.3      |              | 1.000003                  |
| 107000.0                          | 9.0                   | -36.9          |                        |                      | 13.2                         | 598.8             |              |           |              | 1.000003                  |
| 107500.0                          | 8.8                   | -36.7          |                        |                      | 12.9                         | 599.0             |              |           |              | 1.000003                  |
| 108000.0                          | 8.6                   | -36.5          |                        |                      | 12.7                         | 599.3             |              |           |              | 1.000003                  |

UPPER AIR DATA  
 2110020510  
 WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
 29 JULY 76  
 ASCENSION NO. 510

WSTM SITE COORDINATES  
 488580.00 FEET E  
 185045.00 FEET N

TABLE XIII (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 108500.0                          | 8.4                   | -36.3          |                        |                      | 12.4                         | 599.6             |       |                          |                | 1.000003                  |
| 109000.0                          | 8.2                   | -36.1          |                        |                      | 12.1                         | 599.8             |       |                          |                | 1.000003                  |
| 109500.0                          | 8.1                   | -35.9          |                        |                      | 11.8                         | 600.1             |       |                          |                | 1.000003                  |



STATION ALTITUDE 3989.00 FEET MSL  
29 JULY 75 0950 HRS MDT  
ASCENSION NO. 510

MANDATORY LEVELS  
2110020510  
WHITE SANDS

WSTM SITE COORDINATES  
480580.00 FEET E  
185045.00 FEET N

TABLE XIV

| PRESSURE GEOPOTENTIAL |         | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|---------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET    | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                 | 5022.   | 20.5           | 14.2                   | 67.                  | 109.8                    | 2.2            |
| 800.0                 | 6737.   | 18.1           | 13.2                   | 73.                  | 125.5                    | 5.1            |
| 750.0                 | 8551.   | 16.7           | 8.2                    | 57.                  | 184.2                    | 6.3            |
| 700.0                 | 10466.  | 11.7           | 4.2                    | 60.                  | 194.4                    | 9.7            |
| 650.0                 | 12488.  | 7.6            | .3                     | 60.                  | 190.3                    | 13.5           |
| 600.0                 | 14638.  | 3.1            | -3.5                   | 61.                  | 196.9                    | 10.4           |
| 550.0                 | 16935.  | -1.6           | -5.7                   | 73.                  | 206.4                    | 6.8            |
| 500.0                 | 19409.  | -5.8           | -11.7                  | 63.                  | 180.0                    | 4.3            |
| 450.0                 | 22097.  | -10.5          | -17.8                  | 55.                  | 84.9                     | 8.2            |
| 400.0                 | 25040.  | -16.4          | -21.8                  | 63.                  | 29.9                     | 9.7            |
| 350.0                 | 28293.  | -23.2          | -28.0                  | 64.                  | .5                       | 8.3            |
| 300.0                 | 31939.  | -31.2          | -46.6                  | 20.                  | 76.1                     | 8.0            |
| 250.0                 | 36081.  | -42.2          | -50.6                  | 39.                  | 92.3                     | 14.8           |
| 200.0                 | 40908.  | -53.9          |                        |                      | 156.2                    | 21.2           |
| 175.0                 | 43678.  | -60.6          |                        |                      | 173.4                    | 9.1            |
| 150.0                 | 46778.  | -66.4          |                        |                      | 87.7                     | 20.8           |
| 125.0                 | 50400.  | -68.2          |                        |                      | 91.6                     | 14.3           |
| 100.0                 | 54797.  | -67.3          |                        |                      | 43.6                     | 18.7           |
| 80.0                  | 59263.  | -62.4          |                        |                      | 117.0                    | 17.1           |
| 70.0                  | 61986.  | -59.5          |                        |                      | 98.0                     | 17.8           |
| 60.0                  | 65164.  | -57.8          |                        |                      | 93.6                     | 15.7           |
| 50.0                  | 68954.  | -55.8          |                        |                      | 94.5                     | 20.0           |
| 40.0                  | 73643.  | -53.2          |                        |                      | 94.8                     | 23.7           |
| 30.0                  | 79771.  | -49.8          |                        |                      | 96.6                     | 26.2           |
| 25.0                  | 83724.  | -45.3          |                        |                      | 94.1                     | 27.3           |
| 20.0                  | 88626.  | -46.0          |                        |                      | 73.7                     | 31.3           |
| 15.0                  | 94945.  | -43.1          |                        |                      | 84.3                     | 37.4           |
| 10.0                  | 104002. | -38.0          |                        |                      | 100.6                    | 39.5           |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

1000 HRS MDT

SIGNIFICANT LEVEL DATA  
2110030195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XV

| PRESSURE  | GEOMETRIC<br>ALTITUDE | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|-----------|-----------------------|----------------|------------------------|----------------------|
|           |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| MILLIBARS | MSL FEET              |                |                        |                      |
| 878.2     | 4051.0                | 23.9           | 17.4                   | 67.0                 |
| 868.5     | 4369.3                | 21.0           | 15.1                   | 69.0                 |
| 850.2     | 4974.6                | 19.5           | 13.9                   | 70.0                 |
| 840.8     | 5289.2                | 18.5           | 13.8                   | 74.0                 |
| 816.8     | 6106.1                | 18.1           | 9.7                    | 58.0                 |
| 741.8     | 8801.4                | 14.5           | 5.6                    | 55.0                 |
| 699.9     | 10407.5               | 11.0           | 2.3                    | 55.0                 |
| 614.8     | 13917.0               | 3.5            | -2.7                   | 64.0                 |
| 587.8     | 15110.9               | .5             | -2.4                   | 81.0                 |
| 569.8     | 15932.2               | .1             | -4.0                   | 74.0                 |
| 550.2     | 16851.7               | -2.3           | -5.1                   | 81.0                 |
| 544.3     | 17133.6               | -2.5           | -7.0                   | 71.0                 |
| 525.8     | 18034.6               | -3.9           | -7.5                   | 76.0                 |
| 499.9     | 19337.9               | -7.7           | -11.3                  | 75.0                 |
| 484.8     | 20122.5               | -8.1           | -22.6                  | 30.0                 |
| 477.3     | 20520.3               | -9.0           | -16.1                  | 56.0                 |
| 461.8     | 21358.9               | -10.4          | -23.9                  | 32.0                 |
| 439.3     | 22618.8               | -12.6          | -22.0                  | 45.0                 |
| 425.3     | 23429.5               | -14.5          | -20.9                  | 58.0                 |
| 409.8     | 24352.8               | -16.0          | -24.9                  | 46.0                 |
| 400.2     | 24938.8               | -17.5          | -28.1                  | 39.0                 |
| 374.8     | 26546.2               | -20.2          | -38.3                  | 18.0                 |
| 361.8     | 27402.3               | -22.9          | -41.1                  | 17.0                 |
| 336.8     | 29121.3               | -25.3          | -42.6                  | 18.0                 |
| 300.3     | 31822.4               | -32.5          | -48.7                  | 18.0                 |
| 249.8     | 36004.4               | -42.7          |                        |                      |
| 200.1     | 40809.6               | -54.5          |                        |                      |
| 178.3     | 43210.7               | -60.4          |                        |                      |
| 149.9     | 46710.0               | -68.0          |                        |                      |
| 133.3     | 49041.7               | -66.8          |                        |                      |

STATION ALTITUDE 4051.00 FEET MSL  
 29 JULY 76  
 ASCENSION NO. 195

1000 HRS MDT

SIGNIFICANT LEVEL DATA  
 21100JUL195  
 JALLEN

WSTM SITE COORDINATES  
 450491.60 FEET E  
 464023.05 FEET N

TABLE XV (CONT)

| PRESSURE | GEOMETRIC<br>ALTITUDE | TEMPERATURE<br>AIR DEWPOINT<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT |
|----------|-----------------------|---|----------------------|
| 108.3    | 53145.9               | -70.3   |                      |
| 100.1    | 54690.6               | -69.9   |                      |
| 70.0     | 61876.3               | -60.6   |                      |
| 50.0     | 68850.5               | -57.0   |                      |
| 30.0     | 79692.7               | -50.6   |                      |
| 20.0     | 88523.6               | -46.0   |                      |
| 13.3     | 97572.7               | -42.7   |                      |
| 11.8     | 100278.6              | -37.5   |                      |
| 10.0     | 104064.1              | -37.5   |                      |

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

1000 HRS MDT

UPPER AIR DATA  
21100J0195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XVI

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|---------------------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS |                                       |                |                           |
| 4051.0                            | 878.2                 | 23.9           | 17.4                   | 67.0                 | 1021.1                       | 674.3             |       | .0                                    |                | 1.000313                  |
| 4500.0                            | 864.5                 | 20.7           | 14.8                   | 69.2                 | 1017.4                       | 670.3             |       | 57.0                                  | .4             | 1.000301                  |
| 5000.0                            | 849.4                 | 19.4           | 13.9                   | 70.3                 | 1004.3                       | 668.7             |       | 57.0                                  | .9             | 1.000294                  |
| 5500.0                            | 834.5                 | 18.4           | 12.8                   | 69.9                 | 990.5                        | 667.4             |       | 57.0                                  | 1.3            | 1.000287                  |
| 6000.0                            | 819.9                 | 16.2           | 10.3                   | 60.1                 | 974.8                        | 666.8             |       | 57.0                                  | 1.8            | 1.000273                  |
| 6500.0                            | 805.4                 | 17.6           | 9.1                    | 57.6                 | 957.8                        | 666.1             |       | 112.3                                 | 1.0            | 1.000266                  |
| 7000.0                            | 791.1                 | 16.9           | 8.3                    | 57.0                 | 945.2                        | 665.2             |       | 172.3                                 | 2.0            | 1.000260                  |
| 7500.0                            | 777.1                 | 16.2           | 7.6                    | 56.4                 | 930.7                        | 664.4             |       | 181.3                                 | 3.4            | 1.000255                  |
| 8000.0                            | 763.3                 | 15.6           | 6.8                    | 55.9                 | 915.5                        | 663.6             |       | 184.3                                 | 4.9            | 1.000249                  |
| 8500.0                            | 749.8                 | 14.9           | 6.0                    | 55.3                 | 902.5                        | 662.8             |       | 185.9                                 | 6.0            | 1.000244                  |
| 9000.0                            | 736.5                 | 14.1           | 5.2                    | 55.0                 | 889.2                        | 661.7             |       | 187.0                                 | 7.0            | 1.000239                  |
| 9500.0                            | 723.3                 | 13.0           | 4.2                    | 55.0                 | 876.8                        | 660.4             |       | 193.0                                 | 8.5            | 1.000233                  |
| 10000.0                           | 710.3                 | 11.9           | 3.1                    | 55.0                 | 864.6                        | 659.1             |       | 196.2                                 | 10.4           | 1.000228                  |
| 10500.0                           | 697.5                 | 10.8           | 2.2                    | 55.2                 | 852.4                        | 657.8             |       | 199.2                                 | 11.5           | 1.000224                  |
| 11000.0                           | 684.8                 | 9.7            | 1.5                    | 56.5                 | 840.1                        | 656.5             |       | 199.2                                 | 12.3           | 1.000219                  |
| 11500.0                           | 672.2                 | 8.7            | .8                     | 57.8                 | 827.9                        | 655.2             |       | 197.2                                 | 11.8           | 1.000215                  |
| 12000.0                           | 659.9                 | 7.6            | .1                     | 59.1                 | 816.0                        | 653.9             |       | 194.2                                 | 11.0           | 1.000211                  |
| 12500.0                           | 647.8                 | 6.5            | -.6                    | 60.4                 | 804.2                        | 652.6             |       | 193.7                                 | 10.0           | 1.000208                  |
| 13000.0                           | 636.0                 | 5.5            | -1.3                   | 61.6                 | 792.6                        | 651.3             |       | 194.7                                 | 8.9            | 1.000204                  |
| 13500.0                           | 624.4                 | 4.4            | -2.0                   | 62.9                 | 781.2                        | 650.1             |       | 194.5                                 | 7.6            | 1.000200                  |
| 14000.0                           | 612.9                 | 3.3            | -2.6                   | 65.2                 | 770.0                        | 648.7             |       | 192.6                                 | 6.2            | 1.000197                  |
| 14500.0                           | 601.5                 | 2.0            | -2.4                   | 72.3                 | 759.0                        | 647.3             |       | 183.3                                 | 5.5            | 1.000195                  |
| 15000.0                           | 590.3                 | .8             | -2.4                   | 79.4                 | 746.2                        | 645.8             |       | 181.3                                 | 6.1            | 1.000193                  |
| 15500.0                           | 579.2                 | .3             | -3.1                   | 77.7                 | 735.5                        | 645.3             |       | 176.6                                 | 6.7            | 1.000188                  |
| 16000.0                           | 568.3                 | -.1            | -4.0                   | 74.5                 | 722.8                        | 644.7             |       | 176.7                                 | 7.0            | 1.000184                  |
| 16500.0                           | 557.6                 | -1.4           | -4.7                   | 78.3                 | 712.7                        | 643.2             |       | 176.6                                 | 7.2            | 1.000181                  |
| 17000.0                           | 547.1                 | -2.4           | -6.1                   | 75.7                 | 702.0                        | 641.9             |       | 174.4                                 | 6.6            | 1.000176                  |
| 17500.0                           | 536.7                 | -3.1           | -7.2                   | 73.0                 | 690.5                        | 641.0             |       | 171.8                                 | 6.1            | 1.000172                  |
| 18000.0                           | 526.5                 | -3.8           | -7.5                   | 75.8                 | 679.4                        | 640.1             |       | 160.9                                 | 6.0            | 1.000170                  |
| 18500.0                           | 516.4                 | -5.3           | -8.9                   | 75.6                 | 670.0                        | 638.4             |       | 149.9                                 | 6.1            | 1.000166                  |



STATION ALTITUDE 4051.00 FEET MSL

29 JULY 76

1000 HRS MDT

ASCENSION NO. 195

UPPER AIR DATA

2110030195

JALLEN

 WSTM SITE COORDINATES  
 450491.60 FEET E  
 464023.05 FEET N

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | *IND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 19000.0                           | 506.5                 | -5.7                                     | 75.3                 | 660.9                        | 636.6                      | 126.9                                 | 7.3            | 1.000162                  |
| 19500.0                           | 496.7                 | -7.8                                     | 65.7                 | 651.0                        | 635.2                      | 115.7                                 | 9.5            | 1.000157                  |
| 20000.0                           | 487.1                 | -8.0                                     | 37.0                 | 639.5                        | 634.6                      | 101.8                                 | 11.6           | 1.000149                  |
| 20500.0                           | 477.7                 | -9.0                                     | 54.7                 | 629.0                        | 633.6                      | 95.8                                  | 13.7           | 1.000149                  |
| 21000.0                           | 468.4                 | -9.8                                     | 42.3                 | 619.0                        | 632.5                      | 94.4                                  | 14.2           | 1.000145                  |
| 21500.0                           | 459.2                 | -10.6                                    | 33.5                 | 609.0                        | 631.4                      | 94.5                                  | 13.2           | 1.000141                  |
| 22000.0                           | 450.2                 | -11.5                                    | 38.6                 | 599.0                        | 630.4                      | 91.7                                  | 12.5           | 1.000139                  |
| 22500.0                           | 441.4                 | -12.4                                    | 43.8                 | 589.1                        | 629.4                      | 89.1                                  | 10.8           | 1.000137                  |
| 23000.0                           | 432.7                 | -13.5                                    | 51.1                 | 579.9                        | 628.1                      | 77.1                                  | 9.3            | 1.000135                  |
| 23500.0                           | 424.1                 | -14.6                                    | 57.1                 | 570.9                        | 626.7                      | 63.6                                  | 8.2            | 1.000134                  |
| 24000.0                           | 415.7                 | -15.4                                    | 50.6                 | 561.4                        | 625.7                      | 51.2                                  | 7.4            | 1.000130                  |
| 24500.0                           | 407.4                 | -16.4                                    | 44.2                 | 552.3                        | 624.5                      | 45.3                                  | 6.3            | 1.000127                  |
| 25000.0                           | 399.2                 | -17.6                                    | 38.2                 | 543.9                        | 622.9                      | 36.4                                  | 5.4            | 1.000125                  |
| 25500.0                           | 391.1                 | -18.4                                    | 31.7                 | 534.7                        | 621.9                      | 40.3                                  | 5.2            | 1.000122                  |
| 26000.0                           | 383.2                 | -19.3                                    | 25.1                 | 525.7                        | 620.8                      | 42.2                                  | 5.0            | 1.000119                  |
| 26500.0                           | 375.5                 | -20.1                                    | 18.6                 | 516.9                        | 619.8                      | 57.2                                  | 6.2            | 1.000116                  |
| 27000.0                           | 367.9                 | -21.6                                    | 17.5                 | 509.4                        | 617.9                      | 67.1                                  | 7.9            | 1.000115                  |
| 27500.0                           | 360.3                 | -23.0                                    | 17.1                 | 501.8                        | 616.2                      | 74.3                                  | 9.9            | 1.000113                  |
| 28000.0                           | 352.9                 | -23.7                                    | 17.3                 | 492.6                        | 615.3                      | 79.3                                  | 12.1           | 1.000111                  |
| 28500.0                           | 345.6                 | -24.4                                    | 17.6                 | 484.0                        | 614.4                      | 81.8                                  | 14.1           | 1.000109                  |
| 29000.0                           | 338.5                 | -25.1                                    | 17.9                 | 475.4                        | 613.6                      | 82.9                                  | 16.0           | 1.000107                  |
| 29500.0                           | 331.4                 | -26.3                                    | 18.0                 | 467.7                        | 612.1                      | 82.0                                  | 17.1           | 1.000105                  |
| 30000.0                           | 324.5                 | -27.6                                    | 18.0                 | 460.3                        | 610.5                      | 77.7                                  | 17.0           | 1.000103                  |
| 30500.0                           | 317.6                 | -29.0                                    | 18.0                 | 453.1                        | 608.8                      | 73.3                                  | 17.1           | 1.000102                  |
| 31000.0                           | 311.0                 | -30.3                                    | 18.0                 | 446.1                        | 607.1                      | 68.7                                  | 17.6           | 1.000100                  |
| 31500.0                           | 304.4                 | -31.6                                    | 18.0                 | 439.1                        | 605.5                      | 64.4                                  | 18.3           | 1.000098                  |
| 32000.0                           | 298.0                 | -32.9                                    | 17.2**               | 432.1                        | 603.8                      | 62.3                                  | 18.3           | 1.000097                  |
| 32500.0                           | 291.5                 | -34.2                                    | 15.1**               | 424.8                        | 602.3                      | 60.4                                  | 18.2           | 1.000095                  |
| 33000.0                           | 285.1                 | -35.4                                    | 12.9**               | 417.7                        | 600.7                      | 60.8                                  | 17.8           | 1.000093                  |
| 33500.0                           | 278.9                 | -36.6                                    | 10.8**               | 410.7                        | 599.2                      | 62.5                                  | 17.1           | 1.000092                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

UPPER AIR DATA  
211000Z195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|---------------------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS |                                       |                |                           |
| 34000.0                           | 272.8                 | -37.8          | -59.1                  | 8.6**                | 403.9                        | 597.7             |       | 64.9                                  | 16.2           | 1.000090                  |
| 34500.0                           | 266.9                 | -39.0          | -62.2                  | 6.5**                | 397.1                        | 596.1             |       | 66.6                                  | 15.1           | 1.000089                  |
| 35000.0                           | 261.1                 | -40.3          | -66.1                  | 4.3**                | 390.5                        | 594.5             |       | 72.8                                  | 14.0           | 1.000087                  |
| 35500.0                           | 255.4                 | -41.5          | -71.6                  | 2.2**                | 384.0                        | 593.0             |       | 73.3                                  | 13.2           | 1.000086                  |
| 36000.0                           | 249.8                 | -42.7          | -79.0                  | .0**                 | 377.7                        | 591.4             |       | 73.8                                  | 12.4           | 1.000084                  |
| 36500.0                           | 244.1                 | -43.9          |                        |                      | 371.0                        | 589.8             |       | 74.2                                  | 12.2           | 1.000083                  |
| 37000.0                           | 238.6                 | -45.1          |                        |                      | 364.5                        | 588.3             |       | 74.5                                  | 12.0           | 1.000081                  |
| 37500.0                           | 233.1                 | -46.4          |                        |                      | 358.1                        | 586.7             |       | 79.3                                  | 11.4           | 1.000080                  |
| 38000.0                           | 227.8                 | -47.6          |                        |                      | 351.9                        | 585.1             |       | 87.0                                  | 10.6           | 1.000078                  |
| 38500.0                           | 222.6                 | -48.8          |                        |                      | 345.7                        | 583.5             |       | 96.0                                  | 10.2           | 1.000077                  |
| 39000.0                           | 217.5                 | -50.1          |                        |                      | 339.7                        | 581.9             |       | 112.5                                 | 10.4           | 1.000076                  |
| 39500.0                           | 212.6                 | -51.3          |                        |                      | 333.8                        | 580.3             |       | 127.0                                 | 11.4           | 1.000074                  |
| 40000.0                           | 207.7                 | -52.5          |                        |                      | 328.0                        | 578.7             |       | 135.9                                 | 12.5           | 1.000073                  |
| 40500.0                           | 203.0                 | -53.7          |                        |                      | 322.3                        | 577.1             |       | 140.5                                 | 13.1           | 1.000072                  |
| 41000.0                           | 198.3                 | -55.0          |                        |                      | 316.6                        | 575.4             |       | 144.7                                 | 13.7           | 1.000071                  |
| 41500.0                           | 193.6                 | -56.2          |                        |                      | 310.8                        | 573.8             |       | 141.9                                 | 11.8           | 1.000069                  |
| 42000.0                           | 189.0                 | -57.4          |                        |                      | 305.2                        | 572.2             |       | 137.6                                 | 9.9            | 1.000068                  |
| 42500.0                           | 184.5                 | -58.7          |                        |                      | 299.6                        | 570.6             |       | 131.7                                 | 8.7            | 1.000067                  |
| 43000.0                           | 180.1                 | -59.9          |                        |                      | 294.2                        | 568.9             |       | 124.9                                 | 8.1            | 1.000066                  |
| 43500.0                           | 175.8                 | -61.0          |                        |                      | 288.6                        | 567.4             |       | 114.7                                 | 7.6            | 1.000064                  |
| 44000.0                           | 171.5                 | -62.1          |                        |                      | 283.0                        | 565.9             |       | 86.8                                  | 7.6            | 1.000063                  |
| 44500.0                           | 167.3                 | -63.2          |                        |                      | 277.5                        | 564.5             |       | 64.0                                  | 9.2            | 1.000062                  |
| 45000.0                           | 163.2                 | -64.3          |                        |                      | 272.1                        | 563.0             |       | 55.6                                  | 11.0           | 1.000061                  |
| 45500.0                           | 159.2                 | -65.4          |                        |                      | 266.9                        | 561.6             |       | 51.7                                  | 12.8           | 1.000059                  |
| 46000.0                           | 155.3                 | -66.5          |                        |                      | 261.7                        | 560.1             |       | 51.2                                  | 14.4           | 1.000058                  |
| 46500.0                           | 151.5                 | -67.5          |                        |                      | 256.6                        | 558.6             |       | 59.7                                  | 15.6           | 1.000057                  |
| 47000.0                           | 147.7                 | -67.9          |                        |                      | 250.7                        | 558.2             |       | 66.8                                  | 17.1           | 1.000056                  |
| 47500.0                           | 144.1                 | -67.6          |                        |                      | 244.1                        | 558.5             |       | 72.0                                  | 18.0           | 1.000054                  |
| 48000.0                           | 140.5                 | -67.3          |                        |                      | 237.8                        | 558.9             |       | 76.3                                  | 18.1           | 1.000053                  |
| 48500.0                           | 137.0                 | -67.1          |                        |                      | 231.6                        | 559.2             |       | 80.4                                  | 18.3           | 1.000052                  |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

UPPER AIR DATA  
2110030195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

1000 HRS MDT

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA<br>DIRECTION<br>DEGREES (TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS |  |                |                           |
| 49000.0                           | 133.6                 | -60.8          |                        |                      | 225.5                        | 559.6             |       | 84.3                                   | 18.5           | 1.000050                  |
| 49500.0                           | 130.2                 | -67.2          |                        |                      | 220.3                        | 559.1             |       | 88.0                                   | 18.6           | 1.000049                  |
| 50000.0                           | 127.0                 | -67.6          |                        |                      | 215.2                        | 558.5             |       | 91.5                                   | 19.2           | 1.000048                  |
| 50500.0                           | 123.8                 | -68.0          |                        |                      | 210.3                        | 557.9             |       | 92.0                                   | 20.0           | 1.000047                  |
| 51000.0                           | 120.7                 | -68.5          |                        |                      | 205.5                        | 557.4             |       | 91.3                                   | 21.1           | 1.000046                  |
| 51500.0                           | 117.7                 | -68.9          |                        |                      | 200.8                        | 556.8             |       | 90.7                                   | 22.1           | 1.000045                  |
| 52000.0                           | 114.8                 | -69.3          |                        |                      | 196.1                        | 556.2             |       | 89.2                                   | 20.4           | 1.000044                  |
| 52500.0                           | 111.9                 | -69.7          |                        |                      | 191.0                        | 555.6             |       | 87.3                                   | 18.5           | 1.000043                  |
| 53000.0                           | 109.1                 | -70.2          |                        |                      | 187.3                        | 555.0             |       | 84.2                                   | 16.5           | 1.000042                  |
| 53500.0                           | 106.4                 | -70.2          |                        |                      | 182.6                        | 555.0             |       | 70.7                                   | 14.0           | 1.000041                  |
| 54000.0                           | 103.7                 | -70.1          |                        |                      | 177.9                        | 555.2             |       | 53.0                                   | 12.6           | 1.000040                  |
| 54500.0                           | 101.1                 | -69.9          |                        |                      | 173.3                        | 555.3             |       | 39.5                                   | 12.9           | 1.000039                  |
| 55000.0                           | 98.6                  | -69.5          |                        |                      | 168.0                        | 556.0             |       | 41.9                                   | 14.6           | 1.000038                  |
| 55500.0                           | 96.1                  | -68.9          |                        |                      | 163.9                        | 556.8             |       | 43.8                                   | 16.2           | 1.000037                  |
| 56000.0                           | 93.8                  | -68.2          |                        |                      | 159.4                        | 557.7             |       | 47.9                                   | 17.3           | 1.000035                  |
| 56500.0                           | 91.5                  | -67.6          |                        |                      | 155.0                        | 558.6             |       | 56.0                                   | 17.5           | 1.000035                  |
| 57000.0                           | 89.2                  | -66.9          |                        |                      | 150.7                        | 559.5             |       | 63.8                                   | 18.2           | 1.000034                  |
| 57500.0                           | 87.0                  | -66.3          |                        |                      | 146.6                        | 560.4             |       | 69.9                                   | 18.1           | 1.000033                  |
| 58000.0                           | 84.9                  | -65.6          |                        |                      | 142.5                        | 561.2             |       | 75.3                                   | 17.3           | 1.000032                  |
| 58500.0                           | 82.8                  | -65.0          |                        |                      | 138.6                        | 562.1             |       | 80.8                                   | 16.7           | 1.000031                  |
| 59000.0                           | 80.8                  | -64.3          |                        |                      | 134.7                        | 563.0             |       | 83.4                                   | 16.5           | 1.000030                  |
| 59500.0                           | 78.8                  | -63.7          |                        |                      | 131.0                        | 563.8             |       | 86.0                                   | 16.3           | 1.000029                  |
| 60000.0                           | 76.9                  | -63.0          |                        |                      | 127.4                        | 564.7             |       | 88.5                                   | 15.5           | 1.000028                  |
| 60500.0                           | 75.0                  | -62.4          |                        |                      | 123.9                        | 565.6             |       | 91.3                                   | 14.3           | 1.000028                  |
| 61000.0                           | 73.1                  | -61.7          |                        |                      | 120.5                        | 566.5             |       | 95.2                                   | 13.4           | 1.000027                  |
| 61500.0                           | 71.3                  | -61.1          |                        |                      | 117.2                        | 567.3             |       | 103.5                                  | 14.4           | 1.000026                  |
| 62000.0                           | 69.6                  | -60.5          |                        |                      | 114.0                        | 568.1             |       | 110.5                                  | 15.6           | 1.000025                  |
| 62500.0                           | 67.9                  | -60.3          |                        |                      | 111.2                        | 568.4             |       | 112.2                                  | 16.9           | 1.000025                  |
| 63000.0                           | 66.3                  | -60.0          |                        |                      | 108.4                        | 568.7             |       | 110.0                                  | 18.3           | 1.000024                  |
| 63500.0                           | 64.7                  | -59.8          |                        |                      | 105.7                        | 569.1             |       | 108.1                                  | 19.7           | 1.000024                  |



STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

UPPER AIR DATA  
2110030195  
JALLEN

WSIM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |   |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 64000.0                           | 63.2                  | -59.5                                       |                      | 103.0                        | 569.4                      | 105.0                    | 19.4           | 1.000023                  |
| 64500.0                           | 61.7                  | -59.2                                       |                      | 100.4                        | 569.8                      | 101.5                    | 19.0           | 1.000022                  |
| 65000.0                           | 60.2                  | -59.0                                       |                      | 97.9                         | 570.1                      | 98.6                     | 18.8           | 1.000022                  |
| 65500.0                           | 58.8                  | -58.7                                       |                      | 95.5                         | 570.5                      | 98.2                     | 19.5           | 1.000021                  |
| 66000.0                           | 57.4                  | -58.5                                       |                      | 93.1                         | 570.8                      | 97.7                     | 20.2           | 1.000021                  |
| 66500.0                           | 56.0                  | -58.2                                       |                      | 90.8                         | 571.2                      | 97.7                     | 20.1           | 1.000020                  |
| 67000.0                           | 54.7                  | -58.0                                       |                      | 88.5                         | 571.5                      | 97.9                     | 19.8           | 1.000020                  |
| 67500.0                           | 53.4                  | -57.7                                       |                      | 86.3                         | 571.8                      | 96.3                     | 19.3           | 1.000019                  |
| 68000.0                           | 52.1                  | -57.4                                       |                      | 84.1                         | 572.2                      | 93.5                     | 18.2           | 1.000019                  |
| 68500.0                           | 50.9                  | -57.2                                       |                      | 82.0                         | 572.5                      | 100.9                    | 17.0           | 1.000018                  |
| 69000.0                           | 49.6                  | -56.9                                       |                      | 80.0                         | 572.9                      | 101.1                    | 17.1           | 1.000018                  |
| 69500.0                           | 48.5                  | -56.6                                       |                      | 78.0                         | 573.3                      | 100.6                    | 17.8           | 1.000017                  |
| 70000.0                           | 47.4                  | -56.3                                       |                      | 76.1                         | 573.7                      | 100.2                    | 18.5           | 1.000017                  |
| 70500.0                           | 46.3                  | -56.0                                       |                      | 74.2                         | 574.0                      | 100.6                    | 18.4           | 1.000017                  |
| 71000.0                           | 45.2                  | -55.7                                       |                      | 72.4                         | 574.4                      | 101.1                    | 18.4           | 1.000016                  |
| 71500.0                           | 44.1                  | -55.4                                       |                      | 70.6                         | 574.8                      | 101.3                    | 18.3           | 1.000016                  |
| 72000.0                           | 43.1                  | -55.1                                       |                      | 68.9                         | 575.2                      | 101.1                    | 18.2           | 1.000015                  |
| 72500.0                           | 42.1                  | -54.8                                       |                      | 67.2                         | 575.6                      | 100.9                    | 18.1           | 1.000015                  |
| 73000.0                           | 41.1                  | -54.6                                       |                      | 65.5                         | 576.0                      | 100.4                    | 17.9           | 1.000015                  |
| 73500.0                           | 40.2                  | -54.3                                       |                      | 63.9                         | 576.4                      | 99.6                     | 17.5           | 1.000014                  |
| 74000.0                           | 39.2                  | -54.0                                       |                      | 62.3                         | 576.8                      | 98.7                     | 17.1           | 1.000014                  |
| 74500.0                           | 38.3                  | -53.7                                       |                      | 60.8                         | 577.2                      | 98.6                     | 17.7           | 1.000014                  |
| 75000.0                           | 37.4                  | -53.4                                       |                      | 59.3                         | 577.5                      | 98.5                     | 18.4           | 1.000013                  |
| 75500.0                           | 36.6                  | -53.1                                       |                      | 57.9                         | 577.9                      | 98.4                     | 19.2           | 1.000013                  |
| 76000.0                           | 35.7                  | -52.8                                       |                      | 56.4                         | 578.3                      | 98.4                     | 20.5           | 1.000013                  |
| 76500.0                           | 34.9                  | -52.5                                       |                      | 55.0                         | 578.7                      | 98.5                     | 21.7           | 1.000012                  |
| 77000.0                           | 34.1                  | -52.2                                       |                      | 53.7                         | 579.1                      | 98.4                     | 22.5           | 1.000012                  |
| 77500.0                           | 33.3                  | -51.9                                       |                      | 52.4                         | 579.5                      | 98.2                     | 22.7           | 1.000012                  |
| 78000.0                           | 32.5                  | -51.6                                       |                      | 51.1                         | 579.9                      | 98.0                     | 22.8           | 1.000011                  |
| 78500.0                           | 31.7                  | -51.3                                       |                      | 49.8                         | 580.3                      | 98.1                     | 23.1           | 1.000011                  |



STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195  
1000 HRS MDT

UPPER AIR DATA  
2110030195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |   |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 79000.0                           | 31.0                  | -51.0                                       |                      | 40.6                         | 580.6                      | 98.4                     | 23.4           | 1.000011                  |
| 79500.0                           | 30.3                  | -50.7                                       |                      | 47.4                         | 581.0                      | 98.7                     | 23.7           | 1.000011                  |
| 80000.0                           | 29.6                  | -50.4                                       |                      | 40.3                         | 581.4                      | 98.0                     | 24.1           | 1.000010                  |
| 80500.0                           | 28.9                  | -50.2                                       |                      | 45.2                         | 581.7                      | 97.0                     | 24.5           | 1.000010                  |
| 81000.0                           | 28.3                  | -49.9                                       |                      | 44.1                         | 582.1                      | 96.1                     | 24.9           | 1.000010                  |
| 81500.0                           | 27.6                  | -49.7                                       |                      | 43.0                         | 582.4                      | 93.8                     | 25.5           | 1.000010                  |
| 82000.0                           | 27.0                  | -49.4                                       |                      | 42.0                         | 582.7                      | 91.5                     | 26.2           | 1.000009                  |
| 82500.0                           | 26.4                  | -49.1                                       |                      | 41.0                         | 583.1                      | 89.2                     | 27.0           | 1.000009                  |
| 83000.0                           | 25.8                  | -48.9                                       |                      | 40.0                         | 583.4                      | 85.2                     | 27.0           | 1.000009                  |
| 83500.0                           | 25.2                  | -48.6                                       |                      | 39.1                         | 583.8                      | 81.1                     | 27.1           | 1.000009                  |
| 84000.0                           | 24.6                  | -48.4                                       |                      | 38.1                         | 584.1                      | 77.0                     | 27.4           | 1.000008                  |
| 84500.0                           | 24.1                  | -48.1                                       |                      | 37.2                         | 584.4                      | 75.0                     | 28.6           | 1.000008                  |
| 85000.0                           | 23.5                  | -47.8                                       |                      | 36.4                         | 584.8                      | 73.1                     | 29.8           | 1.000008                  |
| 85500.0                           | 23.0                  | -47.6                                       |                      | 35.5                         | 585.1                      | 71.4                     | 31.1           | 1.000008                  |
| 86000.0                           | 22.5                  | -47.3                                       |                      | 34.6                         | 585.5                      | 74.5                     | 32.1           | 1.000008                  |
| 86500.0                           | 21.9                  | -47.1                                       |                      | 33.8                         | 585.8                      | 77.6                     | 33.3           | 1.000008                  |
| 87000.0                           | 21.4                  | -46.8                                       |                      | 33.0                         | 586.1                      | 80.5                     | 34.5           | 1.000007                  |
| 87500.0                           | 21.0                  | -46.5                                       |                      | 32.2                         | 586.5                      | 82.3                     | 34.5           | 1.000007                  |
| 88000.0                           | 20.5                  | -46.3                                       |                      | 31.5                         | 586.8                      | 83.9                     | 34.2           | 1.000007                  |
| 88500.0                           | 20.0                  | -46.0                                       |                      | 30.7                         | 587.1                      | 85.5                     | 33.9           | 1.000007                  |
| 89000.0                           | 19.6                  | -45.8                                       |                      | 30.0                         | 587.4                      | 85.4                     | 34.2           | 1.000007                  |
| 89500.0                           | 19.1                  | -45.6                                       |                      | 29.3                         | 587.6                      | 84.5                     | 34.7           | 1.000007                  |
| 90000.0                           | 18.7                  | -45.5                                       |                      | 28.6                         | 587.8                      | 83.6                     | 35.2           | 1.000006                  |
| 90500.0                           | 18.3                  | -45.3                                       |                      | 28.0                         | 588.1                      | 84.8                     | 35.8           | 1.000006                  |
| 91000.0                           | 17.9                  | -45.1                                       |                      | 27.3                         | 588.3                      | 87.7                     | 36.7           | 1.000006                  |
| 91500.0                           | 17.5                  | -44.9                                       |                      | 26.7                         | 588.6                      | 90.4                     | 37.6           | 1.000006                  |
| 92000.0                           | 17.1                  | -44.7                                       |                      | 26.1                         | 588.8                      | 93.1                     | 38.4           | 1.000006                  |
| 92500.0                           | 16.7                  | -44.5                                       |                      | 25.5                         | 589.0                      | 95.8                     | 39.1           | 1.000006                  |
| 93000.0                           | 16.3                  | -44.4                                       |                      | 24.9                         | 589.3                      | 98.4                     | 39.8           | 1.000006                  |
| 93500.0                           | 16.0                  | -44.2                                       |                      | 24.3                         | 589.5                      | 99.9                     | 40.6           | 1.000005                  |

STATION ALTITUDE 4051.00 FEET MSL  
 29 JULY 76  
 ASCENSION NO. 195  
 1000 HRS MDT  
 UPPER AIR DATA  
 21100Z0195  
 JALLEN  
 WSTM SITE COORDINATES  
 450491.60 FEET E  
 464023.05 FEET N

TABLE XVI (CONT)

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |   |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 94000.0                           | 15.6                  | -44.0                                       |                      | 25.6                         | 509.7                      | 97.2                     | 41.0           | 1.000005                  |
| 94500.0                           | 15.3                  | -43.8                                       |                      | 25.2                         | 500.0                      | 94.6                     | 41.6           | 1.000005                  |
| 95000.0                           | 14.9                  | -43.6                                       |                      | 22.7                         | 500.2                      | 92.1                     | 42.3           | 1.000005                  |
| 95500.0                           | 14.6                  | -43.5                                       |                      | 22.1                         | 500.4                      | 89.3                     | 42.7           | 1.000005                  |
| 96000.0                           | 14.3                  | -43.3                                       |                      | 21.6                         | 500.7                      | 85.7                     | 43.2           | 1.000005                  |
| 96500.0                           | 14.0                  | -43.1                                       |                      | 21.1                         | 500.9                      | 80.1                     | 43.8           | 1.000005                  |
| 97000.0                           | 13.6                  | -42.9                                       |                      | 20.6                         | 501.1                      | 83.5                     | 43.8           | 1.000005                  |
| 97500.0                           | 13.3                  | -42.7                                       |                      | 20.2                         | 501.4                      | 83.2                     | 43.5           | 1.000004                  |
| 98000.0                           | 13.1                  | -41.9                                       |                      | 19.7                         | 502.5                      | 85.0                     | 43.5           | 1.000004                  |
| 98500.0                           | 12.8                  | -40.9                                       |                      | 19.1                         | 503.7                      | 85.7                     | 43.8           | 1.000004                  |
| 99000.0                           | 12.5                  | -40.0                                       |                      | 16.7                         | 504.9                      | 84.8                     | 44.4           | 1.000004                  |
| 99500.0                           | 12.2                  | -39.0                                       |                      | 18.2                         | 505.1                      | 85.9                     | 45.0           | 1.000004                  |
| 100000.0                          | 11.9                  | -38.0                                       |                      | 17.7                         | 507.4                      | 80.0                     | 45.5           | 1.000004                  |
| 100500.0                          | 11.7                  | -37.5                                       |                      | 17.3                         | 508.0                      | 91.6                     | 45.2           | 1.000004                  |
| 101000.0                          | 11.4                  | -37.5                                       |                      | 16.9                         | 508.0                      | 95.1                     | 46.3           | 1.000004                  |
| 101500.0                          | 11.2                  | -37.5                                       |                      | 16.5                         | 508.0                      | 90.5                     | 46.9           | 1.000004                  |
| 102000.0                          | 10.9                  | -37.5                                       |                      | 16.2                         | 508.0                      |                          |                | 1.000004                  |
| 102500.0                          | 10.7                  | -37.5                                       |                      | 15.8                         | 508.0                      |                          |                | 1.000004                  |
| 103000.0                          | 10.5                  | -37.5                                       |                      | 15.5                         | 508.0                      |                          |                | 1.000003                  |
| 103500.0                          | 10.2                  | -37.5                                       |                      | 15.2                         | 508.0                      |                          |                | 1.000003                  |
| 104000.0                          | 10.0                  | -37.5                                       |                      | 14.8                         | 508.0                      |                          |                | 1.000003                  |

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 76  
ASCENSION NO. 195

MANDATORY LEVELS  
21100J0195  
JALLEN

WSTM SITE COORDINATES  
450491.60 FEET E  
464023.05 FEET N

TABLE XVII

| PRESSURE GEOPOTENTIAL |         | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|---------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET    | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                 | 4980.   | 19.5           | 13.9                   | 70.                  | 57.0                     | .9             |
| 800.0                 | 6688.   | 17.3           | 8.0                    | 57.                  | 145.1                    | 1.2            |
| 750.0                 | 8491.   | 14.9           | 6.1                    | 55.                  | 185.9                    | 6.0            |
| 700.0                 | 10397.  | 11.0           | 2.3                    | 55.                  | 199.2                    | 11.3           |
| 650.0                 | 12413.  | 6.7            | -0.5                   | 60.                  | 193.0                    | 10.2           |
| 600.0                 | 14554.  | 1.9            | -2.4                   | 73.                  | 167.0                    | 5.6            |
| 550.0                 | 16845.  | -2.3           | -5.2                   | 81.                  | 175.1                    | 6.8            |
| 500.0                 | 19312.  | -7.7           | -11.0                  | 75.                  | 115.3                    | 8.7            |
| 450.0                 | 21986.  | -11.5          | -22.7                  | 39.                  | 91.0                     | 12.5           |
| 400.0                 | 24917.  | -17.5          | -28.1                  | 39.                  | 38.0                     | 5.4            |
| 350.0                 | 28157.  | -24.0          | -41.8                  | 17.                  | 80.7                     | 13.0           |
| 300.0                 | 31791.  | -32.6          | -48.0                  | 16.**                | 62.9                     | 18.3           |
| 250.0                 | 35918.  | -42.7          | -92.0                  | 0.**                 | 73.0                     | 12.5           |
| 200.0                 | 40733.  | -54.5          |                        |                      | 143.2                    | 13.5           |
| 175.0                 | 43495.  | -61.2          |                        |                      | 110.0                    | 7.5            |
| 150.0                 | 46585.  | -68.0          |                        |                      | 62.5                     | 16.1           |
| 125.0                 | 50190.  | -67.9          |                        |                      | 92.3                     | 19.6           |
| 100.0                 | 54558.  | -69.9          |                        |                      | 40.0                     | 13.6           |
| 80.0                  | 58979.  | -64.1          |                        |                      | 84.1                     | 16.4           |
| 70.0                  | 61684.  | -60.6          |                        |                      | 105.2                    | 15.2           |
| 60.0                  | 64845.  | -59.0          |                        |                      | 98.0                     | 18.9           |
| 50.0                  | 68615.  | -57.0          |                        |                      | 101.3                    | 16.8           |
| 40.0                  | 73280.  | -54.2          |                        |                      | 99.5                     | 17.4           |
| 30.0                  | 79383.  | -50.6          |                        |                      | 98.0                     | 23.9           |
| 25.0                  | 83301.  | -48.5          |                        |                      | 80.0                     | 27.2           |
| 20.0                  | 88144.  | -46.0          |                        |                      | 85.0                     | 33.9           |
| 15.0                  | 94456.  | -43.7          |                        |                      | 92.6                     | 42.1           |
| 10.0                  | 103543. | -37.5          |                        |                      |                          |                |

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.